MINISTRY OF HEALTH

On the State of
THE PUBLIC HEALTH

THE ANNUAL REPORT OF
THE CHIEF MEDICAL OFFICER OF
THE MINISTRY OF HEALTH
FOR THE YEAR 1963

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HER MAJESTY'S STATIONERY OFFICE
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REPORT OF THE CHIEF MEDICAL OFFICER ON THE STATE OF THE PUBLIC HEALTH

FOR THE YEAR ENDED 31st DECEMBER, 1963

INTRODUCTION

To The Rt. Hon. Kenneth Robinson, M.P.
Minister of Health.

Sir,

I have the honour to submit my Report on the State of the Public Health in England and Wales during 1963. Each chapter in this report is designed to give a concise account of developments affecting the medical and allied professional work of this Ministry. On this occasion as in 1962 a few special subjects have been given separate treatment because it is felt that they are of topical interest. In particular this report contains a review of data on morbidity and mortality from arteriosclerotic heart disease, and a summary of current opinion on vaccination and immunisation.

VITAL STATISTICS

At mid-1963 the estimated home population of England and Wales was 47,023,000 compared with the revised figure of 46,709,000 for mid-1962. This represents a considerably smaller increase than was observed in the previous year when the population rose by more than half a million persons. The increase of 0·09 per cent attributable to balance of migration in 1962/63 is the same as the average figure for 1955–59, but considerably less than the percentage increase (0·49) for the period immediately preceding the passing of the Commonwealth Immigrants Act (1962). The number of births increased from 839,000 in 1962 to 856,000 in 1963, but deaths, affected by the exceptionally cold weather early in the year, also rose from 558,000 to 573,000, giving a net natural increase in population of 283,000.

During 1963 the birth rate was 18·2 per thousand population and although this figure has not reached the peak of 20·5 births per thousand population recorded in 1947, the more recent increase has been longer sustained and the total number of births over the last 4 years is 2·6 per cent above the number for 1946–49.

The decline of deaths from poliomyelitis, tuberculosis, syphilis and meningitis continued in 1963. For poliomyelitis the fall from 338 deaths in 1953 to 39 in 1963 must be mainly attributable to immunisation. Diphtheria, whooping cough and poliomyelitis have been eliminated as major causes of death, yet complete eradication has not been attained, nor can it be more nearly approached unless immunisation programmes are made more complete.

The Standardised Mortality Ratios, taking age specific death rates for the 3 years 1950–52 as the standard, remained approximately static in 1963 for all forms of cancer taken together, but there was the expected increase in deaths from cancer of the lung which now accounts for 13 per cent of all deaths of men in their fifties.

Maternal deaths fell from 299 in 1962 to 243 in 1963 giving a rate of 0·28 per 1,000 total births, the best ever recorded in this country and one which compares favourably with any other yet known. The stillbirth rate declined from 18·1 per thousand total births to 17·2 in 1963. On comparing the years 1961–1962, improvement was recorded at all maternal ages and parities, with the exception of those over 45 years and with high parities. The infant mortality rate of 21·1 per thousand live births was the lowest ever recorded in England and Wales. Deaths of infants between one week and one year have not declined in recent years in the same way as deaths under one week. For example, deaths from pneumonia in infants after the first month of life rose from 220 per 100,000 live births in 1962 to 255 in 1963. This is probably due partly to the survival of infants with conditions which formerly caused death within one week, and partly to the severe winter.

Chapter I also gives tables showing some interesting international comparisons which illustrate that this country compares reasonably well with others in infant mortality rates, and particularly in death rates in childhood, adolescence and young adult life. However, the rates at later ages are less favourable than those in some other comparable countries for reasons which are not clear. A higher proportion of the population now reach later ages, but at those ages experience no more favourable expectation of life than they would have done had they lived decades earlier.

In general, the year's vital statistics show evidence of continued improvement in the nation's health, but they are also a reminder that much more can yet be done.

COMMUNICABLE DISEASES

Typhoid fever has been an infrequent occurrence in England and Wales in recent years and apart from local outbreaks, which are few, half the infections reported have been contracted abroad. Paratyphoid fever with its closer kinship to food poisoning has been more commonly the cause of local outbreaks, but it also seemed to be coming under better control. In 1963 we were faced with outbreaks of both diseases arising from exposure to infection in other countries or importation of infected food from them. These incidents are another sharp reminder that communicable disease in other countries may affect this country by a variety of routes.

This country was involved in an apparently waterborne epidemic of typhoid fever at Zermatt in Switzerland which occurred at the height of the winter sports season. The report of three cases in England by 12th March first led to the detection of the outbreak, and transmission of a warning to medical officers of health was followed by information of a total of 69 cases, only one of which was a secondary case infected in this country. It seems probable that the infecting dose in Zermatt was heavy, for of one party of 95 persons, 31 developed typhoid, an attack rate of 33 per cent. The fact that only three of the total of 68 patients had been inoculated with T.A.B. vaccine within one year draws further attention to the desirability of protecting intending travellers with T.A.B. vaccine.

Three indigenous outbreaks occurred in Harlow in May, South Shields in June and Bedford in October, and were similar in type and origin. There were 23 clinical cases and three excreters in Harlow, 24 cases and three excreters in South Shields, and 16 primary cases and two excreters in Bedford with a total of eight secondary cases in addition. Three different phage types were involved.

Each of these outbreaks was believed to be due to the contents of one 6 lb. tin of corned beef, opened and sliced in the stores where the purchases were made.

Past experience suggested that contamination after opening was the usual method of infection where canned meat was the vehicle, and a source was diligently sought. Enquiry revealed, however, that the overseas factory where this particular meat was produced used untreated river water for cooling the cans after processing and that typhoid had occurred upstream from the plant at a relevant time. It was finally concluded that a faulty seam in an occasional can must have permitted entry of raw river water during cooling and that water was specifically polluted with *S. typhi* which contrary to all previous expectation, had grown without other organisms which would reveal the contamination. Such contamination would usually include anaerobic gas producing organisms and these would cause the can to be blown or the meat to be obviously spoilt. After discussions with the importers all cans produced at this factory after 30th May, 1962, were voluntarily withdrawn from circulation.

The enquiries into these three incidents produced strong circumstantial evidence of a method of spread of typhoid infection not previously recognised as a serious possibility and credit is due to the Public Health Staff whose meticulous enquiries, helped by the industry and the producers in Argentina, led to a conclusion which none had anticipated. Dr. Ash of Harlow was the first to affirm the possibility which may well have passed unrecognised on earlier occasions because of the extreme rarity of the occurrence in a food universally held to be eminently safe. Despite these incidents and subsequent experience elsewhere, canned meats remain a distinctively safe food, though assumptions as to the possibility of undetected contamination after heat treatment of the can must now be reviewed. Of the remaining 108 cases of typhoid notified, 48 contracted their infections abroad.

In Chapter VIII of this report, attention is drawn to Regulations which came into force on 1st January, 1964, and included the requirement that all bulked liquid whole egg shall be pasteurised before importation into this country. The Enteric Reference Laboratory at Colindale reported 153 cases of paratyphoid fever and 21 excreters associated with four outbreaks, believed to have been caused by infection from such shipments and these infections were linked with similar cases in Edinburgh in the last half of December, 1962. Although none of the batches of Chinese egg still in use in the bakeries concerned was found to be contaminated with paratyphoid, further samples of those cargoes suspected of being responsible, revealed the presence of *S. paratyphi B*.

There were 33 cases of diphtheria notified in 1963 compared with 16 in 1962. This increase was caused by six outbreaks in schools in different parts of the country. Two deaths occurred, one in an unimmunised child of one year, the other in a boy aged 7 years with a doubtful history of immunisation in infancy. This incidence is trifling from the national viewpoint, but tragic to the families concerned. Control is no longer a major public health problem, but individual prevention is a necessity for every family. Diphtheria should not need control; it should be prevented. A total of 700,072 children under the age of 15 were immunised in 1963, compared with 652,904 in 1962 and 874,987 in 1961.

The contribution of influenza virus infection to total morbidity and mortality from respiratory disease in the winter of 1962–63 was difficult to assess because of illness associated with the severe weather. However, influenza Virus A infection did cause an increase in morbidity and mortality in the second half of the winter. The amount of absence from work due to illness was comparable with that in earlier "influenza years".

In 1963, the incidence of poliomyelitis infection (1·1 per million) was the lowest ever recorded. There were no major outbreaks and only occasional foci involving more than one case. The Advisory Committee had debated the desirability of using oral vaccine as a "blanketing" operation to try to eliminate wild virus, but had decided against this, recommending instead the use of vaccine for all contacts of each new case reported. Routine vaccination was carried out mainly with oral vaccine and by the end of the year 18·9 million persons in England and Wales had received a primary course of vaccination since the campaign began. The maintenance of this protection is a matter of great importance.

The number of notifications of whooping cough rose from 8,347 in 1962 to 34,736 in 1963, with a peak in the fourth quarter of the year. 4,117 of these children were aged less than one year and 29 of them died. The position is not entirely satisfactory for the available vaccines should give a large measure of protection. It may be that their tendency to produce local reactions makes parents less ready to accept vaccination when incidence of the disease is low.

Food poisoning due to *Cl. welchi* infections increased considerably during the year. Half the total number of these outbreaks and two-thirds the total number of cases in them occurred in hospitals and schools. In nearly all instances the pre-cooking of meat was involved. There were 15 deaths from food poisoning, three of which resulted from a *Cl. welchi* outbreak of food poisoning in a geriatric hospital. This is unsatisfactory since attention to certain precautions in cooking and preparation should greatly reduce such occurrences—especially those due to *Cl. welchi* infection.

There were 2,694 cases of salmonellosis due to food poisoning incidents in 1963 compared with 3,077 in 1962. Outbreaks occurred in the New Forest area where 28 people were infected with *S. heidelberg* following the consumption of unpasteurised milk from a herd found to be infected, and in Leicester where infection of pork meat with *S. brandenberg* caused one general outbreak and several family outbreaks. When considering the relatively remote risks of typhoid fever from canned meat, it is well to recall the far greater frequency of infection of these fresh foods.

INTERNATIONAL HEALTH

Many foreign students and graduates in the health professions seek further education and training in the United Kingdom under international organisations, at the instance of their own governments or on their own initiative. In 1962 there were 900 overseas students in our medical schools and at September 30th, 1963, there were 4,025 graduates born outside the U.K. and Eire among the doctors and dentists below the grade of Senior Registrar in our hospitals. The holders of Senior Registrar posts included 171 foreign graduates at this advanced stage of speciality training. Quite aside from special training arrangements such as the Postgraduate Medical Federation and the Universities promote, there is therefore a large contribution to further training of doctors from other countries in our hospital services. Increasing attention is being given to the organisation

of such training as Chapter XIX(*c*) on Postgraduate Education describes. Our hospital services depend on the work of these foreign graduates to an extent which has only been fully appreciated since the "Platt Working Party" held a special census of junior hospital staff, but their work here should make a substantial contribution to future development in their own countries, especially those where hospital services may not yet provide sufficient opportunities for training. It is all the more necessary that this training should be properly organised.

The United Kingdom provides 270 experts who are members of the various World Health Organisation panels and committees which give technical and professional advice to the developing countries. For many years senior members of the medical profession have also visited the developing countries as advisers, examiners or teachers. A small number of exchanges or secondments of Registrars or Senior Registrars and a few of students have also occurred. These exchanges at a junior level are of the greatest importance for the future, as the contribution we can make to the developing countries is more in the general field of medical training than restricted to the problems of tropical diseases. The responsibility for this work is of course that of the Department of Technical Co-operation and the function of the Ministry's medical staff has been to assist in the organisation of training resources here. An intimate working relationship of great value to the Ministry has developed. It must not be forgotten that many British doctors benefit greatly in professional experience from work abroad under such schemes. This is a two-way exchange.

Another function of the World Health Organisation is to provide Fellowships enabling graduates to study in other countries. Many of these Fellows are appointed to work in Europe, and of this number, over one third elected in 1963 to come to Britain. This country therefore makes a very large contribution to one of the more important activities in International Health.

VENEREAL DISEASES

Infectious syphilis has become increasingly prevalent each year since 1958 and the trend was maintained in 1963 when there were 1,390 cases compared with 1,224 in 1962. This increase of 13·5 per cent in the number of cases notified must give rise to anxiety. The rise in the number of cases of gonorrhoea has been resumed at 35,438 in 1962 to 36,049 in 1963, but is less marked than in earlier years. The 36,049 infections occurred in 31,547 patients and once again the incidence in girls below age 17 is a particularly distressing feature. The consultant venereologist at H.M. Prison, Holloway, reported that, of the 415 prostitutes admitted in 1963, 85 were between 15 and 20, and 19 of them were found to have gonorrhoea.

The distribution of cases of early syphilis and gonorrhoea was investigated by the Co-operative Clinical Group for the Study of Venereal Disease. 6·6 per cent of the men suffering from syphilis and 29·1 per cent of the women were born in the West Indies while the figures for gonorrhoea were 25·2 per cent and 10·5 per cent for West Indian men and women. This illustrates a curious contrast in the incidence of early syphilis and of gonorrhoea in West Indian males and females. Only 46·3 per cent of men with gonorrhoea were born in the United Kingdom, but 77·9 per cent of women.

The tracing of contacts with infectious syphilis and gonorrhoea is vitally important. Most doctors still rely on patients to persuade those with whom they have had intercourse to attend for treatment, but this is always unreliable in cases where infection has resulted from casual contact. During the year "contact slips" resulted in only 66 men and 76 women infected with syphilis being traced, and from 13,150 patients with gonorrhoea only 4,627 contacts were traced in this way. The West Riding County Council has developed a more successful contact tracing scheme and the London County Council is now setting up an experiment in which contacts and sources of infection of patients attending two large clinics in London will be traced by trained social service workers.

The incidence of congenital syphilis remains low, but even 16 cases of a disease which is completely preventable should not occur, if the co-operation of patients in antenatal care can be obtained.

It is probable that the incidence of both syphilis and gonorrhoea is lower in this country than in other comparable countries and, despite the problem of immigration, the position has shown less deterioration in recent years. But we are dealing here with communicable diseases spread slowly and by known means and amenable to treatment. Most infections are the result of promiscuous sexual activity and this fact and the existence of such behaviour must be faced. It is the function of clinic and preventive services alike to treat those involved dispassionately as persons with or exposed to a particular communicable disease. The tracing of contacts and the wider use of "cluster" treatment of the known associates of patients seem the only practicable methods of controlling spread. It is for others to pursue the social and moral factors underlying the promiscuous sexual behaviour through which these infections occur.

TUBERCULOSIS

Chapter V records the expected further improvement in mortality and morbidity from tuberculosis. The notification rate at 40·30 per 100,000 of the population probably includes more complete notification of primary tuberculosis than in recent years. The rate is still substantial, but only 15 deaths from respiratory tuberculosis occurred in persons under the age of 25 compared with 421 in 1953, and three-quarters of all deaths from respiratory disease in men were at ages 55 and over. The epidemic of tuberculosis must be measured in decades rather than in single years, and for that reason we must expect that elimination will be slow, since most of those who will develop clinical illness in the next twenty years have already had their primary, now latent, infection. However favourable the trend, unremitting effort to prevent further infections among younger people is essential. If further evidence of that need is required, the register of 3,021 drug resistant cases provides it.

THE CANCERS

In 1963 there were 102,416 deaths from cancer and 820 (0·8 per cent) of these occurred in children under 15 years of age. This figure represents 3·5 per cent of the 23,259 deaths from all causes in childhood, nearly half being attributable to leukaemia.

Leukaemia deaths in children represent 13 per cent of leukaemia deaths at all ages. The causes of leukaemia in children are unknown, but during 1963, Dr. Stewart and her associates at the Department of Social Medicine in Oxford published a progress report on long-term studies designed to determine what effect, if any, antenatal exposure to X-rays may have on the development of

leukaemia in childhood. However, definite conclusions from this research must await the publication of further progress reports.

The Report on Smoking and Health published by the United States Department of Health, Education and Welfare, reiterated the findings of the 1962 Report of the Royal College of Physicians and added a comprehensive bibliography. This overwhelming endorsement of the views repeatedly stated in these Reports and in many other British writings has been of help to the education programme aimed at discouraging young people from starting to smoke. The Report also gave emphasis to the effect of cigarette smoking in increasing the incidence of bronchitis and to the probability of a similar effect on coronary thrombosis. During the year, The Children and Young Persons Act, 1963, made provision for increased penalties for the sale of tobacco to persons under the age of 16, and for failure to comply with an order to remove an automatic cigarette selling machine, or to prevent its being used by persons under 16 years. In May, 1963, hospital authorities were asked to review their rules about smoking in hospitals and some form of restriction was imposed in nearly all of them.

24 anti-smoking clinics have been set up by Local Health and Hospital Authorities, but they are experimental and since there is no panacea which can be offered to the patient, but only encouragement in some form, results are limited and difficult to assess. Some 2,500 persons have attended the clinics, but it is unlikely that more than a third have been able to stop smoking.

20,757 men and 3,677 women died from lung cancer during the year, 655 more than in 1962. Unless smoking habits change, the increase will continue. Women, who smoke fewer cigarettes than men and on the whole start later and are less persistent, nonetheless show now a similar increasing trend, though at a lower level. One change alone can reverse this trend and that is a great reduction in the smoking of cigarettes, and it is encouraging to read that consumption fell by 20 per cent in the United States after publication of their report. There may be lesser factors which contribute, perhaps by some potentiation of the evil effects of inhaled cigarette smoke. Atmospheric pollution, especially by diesel engine exhaust fumes, is often blamed by those who will not face the full implications of the case against cigarettes. The exact number of deaths in the last decade attributable to smoking of cigarettes, whether from lung cancer, bronchitis or other diseases cannot be calculated. It seems probable that 6,500 men under the age of 55 die each year as a result of smoking cigarettes (*Brit. med. J.*, 1964, **1**, 1452) and a smaller, though not inconsiderable number of women; if present habits continue, this number may well increase. The deaths of a much larger and increasing number of older men must also be due to the same cause—but of course the loss of useful life for each is less.

Any adult is clearly entitled to choose to accept the risk of smoking for himself; on any rational appraisal of the facts he would choose a pipe or cigar from which risks are small. But every adult who has influence with children or adolescents has an added responsibility to them, and to encourage other people, of whatever age, to smoke cigarettes is to push them into needless danger: no parents, aware of the facts, could do such a thing to their children. Some cigarette smokers cannot give up their compulsive habit; some can and will not try; others can and do with real benefit to their health. An intelligent society cannot fail ultimately to reject this damaging habit so that the ash tray will one day become as unnecessary as the spittoon. The longer that rejection is delayed the more lives will be needlessly cut short. If a harmless cigarette can be produced the habit might become acceptable, but there is no sign that such a development is at hand and no justification for awaiting it.

The early detection of cancer of the uterus should be facilitated by implementation of the Standing Medical Advisory Committee's recommendation that provision be made in hospital pathology laboratories for routine cytological examination, with priority for the age range 35 to 60 years, at five yearly intervals. Increased numbers of staff qualified to carry out these examinations will be required and facilities for training specialized staff are to be provided in 1964 at centres at Newcastle, Manchester, Birmingham and London. Investigations on the most satisfactory methods of approaching the public, of collecting material for routine screening and of the assessment of results are being carried out with the Department's encouragement, and with the support of the Medical Research Council and the Royal College of Obstetricians and Gynaecologists.

MATERNAL AND CHILD HEALTH

In 1956 the number of live births was 700,335, but by 1963 this figure had risen to 856,232. The rise in the birth rate has continued to cause pressure on the maternity services, although as the increase has not been uniform throughout the country, the strain has been greater in some areas than in others. The proportion of confinements occurring in N.H.S. hospitals and nursing homes rose to 65 per cent from 60·4 per cent in the same period, although, since there had not been a corresponding increase in the number of beds, this has been achieved largely by a shorter average length of stay in hospital. The Hospital In-patient Enquiry shows that 22 per cent of women were discharged home on or before the seventh day of the puerperium in 1960 compared with 7·3 per cent five years earlier. A number of hospitals have been discharging selected patients home within 48 hours of delivery in order to make the best use of the available beds and to ensure that all "high risk" women and others in the area requiring specialist care are able to be admitted to hospital for labour at least. Studies have shown that planned early discharge, with full co-operation of the woman herself and her family doctor, as well as good supporting services of the local health authority, have been acceptable to mothers, even some in the high risk groups who would have refused admission for the normal stay, and they and their babies have suffered no ill-effects. But professional opinion on such schemes is divided and they do lead to increased pressure on staff, especially those working in labour wards; they could aggravate the dangers if under-staffing and over-crowding were allowed in the same units. It is abundantly clear that no scheme of early discharge can operate without careful preparation and strict adherence to a plan. Impromptu discharge before the expected date because of failure to foresee difficulties can only be deplored. Any plan for an area must be agreed, with hospital and local authority staff and general practitioners all consulted. Local maternity liaison committees which have professional representatives from the three parts of the Service have been specially asked to review the maternity facilities to meet the demands upon them in the light of local circumstances. Special local committees to deal with definite maternity hospital catchment areas have been set up in London to plan bookings ahead and avoid last minute referral to the Emergency Bed Service.

In 1962, the latest year for which figure are available, only 59 per cent of women expecting their fifth or more children were delivered in hospital. This is a great improvement on the year of the Perinatal Mortality Survey, 1958, but it is regrettable that so many mothers are still unpersuaded. The risks of labour at least for these women could be reduced if they would accept admission even if only for 48 hours.

The use of hospital beds depends ultimately on the number of staff available. There has been a steady increase in the number of trained hospital midwives since 1957, and the total number (full-time and part-time) now stands at the highest level recorded so far, although shorter hours now worked by midwives affect this. Meanwhile the hospital building programme is going ahead. The Hospital Plan which allowed for a net addition in the next 11 years of 6,500 new maternity beds was revised in April, 1963, to provide an additional 1,200 beds in the same period, and over 600 additional beds are expected to come into use during 1964.

The 25,498 deaths in the perinatal period, i.e., before, during, and up to a week after birth, although only some 3 per cent of all births, account for 77 per cent of the loss of life between the 28th week of pregnancy and the end of the first year. The perinatal mortality rate has fallen substantially—from 36·2 per thousand to 29·3 per thousand between 1957 and 1963, but there is still much room for improvement. Not only is the loss of infant lives concentrated in the perinatal period, but there is also later morbidity in the survivors of illness or disability at this period, and hospital and community care of the sick child is increasingly concerned with conditions and defects having their origin in the perinatal period.

Various studies have shown that perinatal mortality has a marked regional variation, is influenced by maternal age and parity, previous obstetric history and social class. The Report of the National Birthday Trust Fund in which medical and sociological data were received on 24,000 births which occurred in part of 1958 was published during 1963. The Report drew attention again to the importance of scrupulously careful ante-natal supervision and the specialist care needed by high risk groups among expectant mothers whose infants have more than the average chance of illness or death in the perinatal period. The survey also pointed out the need for greater attention to the care of the infant, particularly the premature infant, during the intra-natal and immediate post-natal period, the early diagnosis of foetal distress and prompt and efficient resuscitative measures. The assessment of avoidability proved too difficult, but the authors state that lapses in care, particularly in the management of toxaemia and intra-partum anoxia suggested that many deaths could have been prevented. Since the time of the survey, perinatal mortality has fallen by more than a seventh, but more can be done. The Fund carried through a most difficult task in organising so comprehensive a study and the results will be of great value for continued study and planning further improvements.

A scheme for the notification of congenital abnormalities to local medical officers of health which will enable a central statistical record of those malformations observable at birth to be compiled has been introduced in collaboration with the General Register Office. It is suggested that local registers should be kept to which additional information can be added about abnormalities which are not immediately manifest. This will allow the follow-up of handicapped children who may need special care, treatment and educational facilities.

The third report on the Confidential Enquiries into Maternal Deaths in England and Wales 1958–1960 was published in 1963. In the period reviewed

928 women died from causes ascribed to childbirth and pregnancy, and reports were obtained on 742. In 315 of these, avoidable factors were present. Toxaemia was still the most common cause of maternal death, and inadequate antenatal care was the most common avoidable factor in this group. Haemorrhage, abortion and pulmonary embolus were the other major causes of maternal death. Important avoidable factors in deaths from haemorrhage were the booking for a home confinement of grand multiparae, older women and women with a past history of post partum haemorrhage, and failure to make use of the Flying Squad.

There is rightly insistence on the possibilities of further improvement in the care of mother and infant, but the Maternity Services in a year of exceptionally heavy pressure due to the increased birth rate have, in fact, the best record yet, the maternal death rate having fallen to 0·28 per 1,000 births.

ENVIRONMENTAL HYGIENE

Control of air pollution is one of the most important public health responsibilities of local authorities. A reduction in the amount of smoke emitted from domestic chimneys will have a decisive effect upon the health of urban communities and in this respect progress is facilitated by the fall in domestic consumption of coal resulting from the increasing use of smokeless fuels coupled with the preference now being shown by many householders for central heating and other labour saving methods of providing domestic warmth. The new high buildings in our cities give an opportunity for observation of the dispersal of smoke after emission which reveals most clearly the way in which it drifts at levels where most of the inhabitants live and breathe. From the windows of the upper floors at the Elephant and Castle it is all too easy to observe the steady contribution from a variety of major installations as well as the many domestic chimneys and the way in which this effluent envelops London's inhabitants.

The demands for electricity now necessitate the building of very large generating stations and it is essential to ensure that the resulting discharge of flue gases to the atmosphere is done in a manner which will not contribute an air pollution hazard. The review of evidence at two public enquiries at which a member of the Ministry's medical staff was present as an assessor has shown that the design of the new, large power stations is expected to ensure that gaseous emissions will be discharged at a height and under such conditions that they will not produce ground level concentrations harmful to health. Research on the potential toxicities of air pollutants is continuing. Meanwhile it is important to be sure that changing methods of fuel utilization do not produce additional adverse atmospheric conditions.

The nation-wide effects of the severe climatic conditions from 22nd December, 1962 to 4th March, 1963, are also discussed in Chapter VIII. In London the excessive cold resulted in a steady rise in mortality figures from 26th December, 1962, reaching maxima on 25th and 28th January, and on 8th February. The January peaks were associated also with high atmospheric pollution. The Emergency Bed Service data for respiratory diseases during the cold spell indicated that the low temperature and high air pollution affected people in the 45–79 age group, but had no noticeable influence on respiratory disorders in the 5–44 age group. This is not surprising if the effect of pollution is to damage slowly and produce serious exacerbation only of established respiratory disease. It may only be immediately menacing to life when the pulmonary reserve has been progressively reduced.

During the year four separate incidents of food poisoning following the consumption of meat which had been treated with a powder containing nicotinic acid and ascorbic acid were reported. No untoward reactions from such powders used in the recommended proportions have been reported, but their employment is designed to disguise the age and quality of the meat to which they are applied and the practice is undesirable. Their use has therefore been banned by the Meat (treatment) Regulations, 1964, which came into force on January 23rd, 1964. Other Regulations designed to protect the community against outbreaks of salmonellosis resulting from the use of unpasteurised bulked whole egg produce came into force on 1st January, 1964. These stipulate that all bulked whole egg from abroad must be pasteurised before importation and all home produced bulked whole egg pasteurised before use. The evolution of a satisfactory method of pasteurisation should have removed the uncertainties hitherto surrounding the use of an otherwise valuable food.

Chapter VIII refers briefly to the work of the Committee on Medical and Nutritional Aspects of Food Policy. Various expert panels under the auspices of this committee have done most valuable work on such questions as protein and calcium requirements, irradiation of food, potential carcinogenicity of food additives or residues. Under the guidance of the committee itself various dietary and nutritional studies are in progress.

DENTAL HEALTH

The results achieved in the fluoridation of water studies in Watford, Kilmarnock and Anglesey (published in Reports on Public Health and Medical Subjects No. 105 H.M.S.O.) have confirmed that an improved standard of dental health results from the addition of fluoride to drinking water in areas where it is naturally deficient, and fluoridation is continuing in the two areas in England. The Minister has given general approval to authorities to arrange for fluoridation and all whose areas have water supplies with low fluoride content have now to decide whether they are prepared to withhold the protection added fluoride can give to the teeth of their children. The scientific validity of the procedure is beyond doubt and no harmful effects will occur, yet the year witnessed one more baseless allegation of risk, based upon an irrelevant observation about tissue cultures which was wrongly interpreted by the opponents of this beneficent procedure. During 1963, studies designed to establish the methods by which fluoride prevents the development of tooth decay have continued at Manchester, Durham, Birmingham and other Universities.

Other research projects undertaken include investigations of improved materials in restoring teeth, dental equipment in relation to dental operator fatigue, the bacteriology of dental caries and the dental plaque, the chemical changes in early dental decay and the histology of the developing tooth and its supporting structures. The volume of research in dentistry is still disappointingly small, though not from lack of readiness to support any promising study.

The considerable progress made in the rebuilding and modernisation of dental teaching hospitals is also discussed in Chapter IX, along with a short account of the new hospital dental department at the Royal Portsmouth Hospital and the area service based upon it.

A review of dental services for children has shown that the level of conservative treatment has been steadily rising and the fall in emergency treatment strongly suggests that children's teeth are being cared for better now than at any earlier time. During the year the central dental staff of the Ministries of Health and Education concerned with children were brought together under the same Chief Dental Officer and he has held a series of regional meetings with the senior dental staff of local authorities.

NURSING

During 1963 the final report of the Assessment Committee on the experimental nurse training at Glasgow Royal Infirmary was published and a scheme for a shortened training course for university graduates and others of similar educational background was inaugurated at St. Thomas' Hospital, London. Recruitment to the profession has improved and a substantial contribution is made by carefully planned nursing cadet schemes. The total number of whole time registered nurses in mental hospitals is the highest on record for female, and the highest since 1956 for male staff.

A revised two-year course for the University of London Sister Tutor Diploma which was introduced in September, 1963, is intended to promote a broader training for student nurses. It may prove difficult to recruit candidates for so long a course, but a special allowance to student tutors who are obliged to live in lodgings while taking the course may help.

Chapter X also deals with nursing administration in the public health services and in hospitals, and reviews the staffing position in the midwifery services. The changing pattern of maternity care has led the Central Midwives Board to review the methods of training pupil midwives.

As units for the treatment of psychiatric patients in general hospitals develop, student nurses from both mental and general hospitals should gain experience in them. It will be most important to ensure that nursing staff in mental hospitals are not cut off from the work in these general hospital units.

MENTAL HEALTH

Beds for the treatment of mental disorders have existed in a few general hospitals for many years, but now that it has become possible to control the acute phases of many psychiatric illnesses in a much shorter time, their number has increased considerably. At present about 5,000 beds for mental illness are available in general hospitals, and the Hospital Plan of which such units are a feature envisages that by 1972–73 this will be increased to 9,000.

The advantages of admitting suitable psychiatric in-patients to general hospitals are discussed in Chapter XI. General hospitals are widely distributed and so are more conveniently situated for mentally ill persons who seek advice and treatment and who may fear admission to a conventional mental hospital whose function they may still regard as custodial in the manner of times past. Earlier treatment so obtained might be expected to reduce the length of stay in hospital and the number of beds required.

Smaller units serving communities relatively close at hand round the general hospital are expected to offer a more effective service and to co-operate with services in the home more easily. The size of many of the old comprehensive psychiatric hospitals is in itself a serious disadvantage and even those which are divided into almost autonomous sections each under the control of a medical team may still not be conveniently situated. It is sometimes argued that these institutions can offer the patient better facilities for occupation and recreation, but even these have the disadvantage of encouraging dependence. It is obvious

that close association of the work of the psychiatrist with that of his colleagues in other branches of medicine must be mutually beneficial. There are elements in the management of patients in mental hospitals which could be introduced to general hospitals with advantage; the benefits are not all on one side.

Patients requiring long stay rehabilitation or treatment under some degree of security may continue to be cared for in the separate mental hospitals and this could lead to a split service and the neglect and deterioration of the long-stay hospital. It is essential that this shall be prevented and that the psychiatric team shall be deployed so that both psychiatrists and nurses share in one service even though it may be divided between general and mental hospital. A particular medical team would then assume responsibility for a patient, whether he is undergoing intensive treatment in a hospital unit, or rehabilitation in a mental hospital, and nurses would be trained in the general hospital unit and the comprehensive psychiatric hospital.

The number of psychiatric units in general hospitals will certainly increase and the benefits are now generally thought to be substantial. The final judgment of relative merits must wait on greater experience and the pattern of care for the long-term patient certainly requires thought and experiment. The fact is that good care can be provided in various ways and there is no justification from present knowledge in insisting upon one of them in all circumstances.

SOCIAL WELFARE

Some of the aims for future planning in the social welfare services were outlined in the ten year plan. Training of social workers is a key to progress in this field and the Council for Training in Social Work has continued its development and awarded certificates to the first 56 students to complete the new training. There are now ten two-year courses and one of a year for existing staff. More one year courses are to be provided. The National Institute for Social Work Training is undertaking a study of practical training facilities and is planning a project of in-service training.

The effective functioning of the welfare services depends upon close co-operation among the various social services and satisfactory relationships with the medical and nursing professions. Such co-operation is very important in work with families and local health and welfare authorities owe much to the example and experience of voluntary effort, notably the Family Service Units whose remarkable work in the most difficult family situations has steadily expanded in the last fifteen years. An interesting experimental project in combined help, the Family Centre of Hackney and Stoke Newington, was established during the year by the Family Service Units and the Family Welfare Association and the Invalid Children's Aid Association. The Children and Young Persons Act (1963) has been generally welcomed as an aid in situations deteriorating to a point at which there is a risk of children being taken into care. Since the Act came into force many health and welfare committees in consultation with children's committees have begun to review present arrangements.

Recent developments in social welfare services for the mentally subnormal, the partially sighted and the elderly are also discussed in Chapter XII.

The recommendation of the Scott Committee led to the establishment in 1963 of a Training Council to promote and approve courses of training for the staff of training centres for the subnormal. Experience has shown that junior and adult centres have different requirements, and are best provided separately both from the point of view of the families of the subnormal and of the subnormal themselves. A valuable development from the centres is the formation of clubs and other activities which help to extend the social capacity of the subnormal.

In respect of education and employment a distinction must necessarily be drawn between the partially sighted and the blind. In the welfare services the blind and partially sighted were traditionally grouped together, but it now seems that some partially sighted people might derive more benefit from association with the services available to the physically handicapped.

The care of the elderly presented some special problems during the severe winter of 1963, and a drive has been made since in most places to increase the meals service which worked under particular difficulty and was specially needed then. Schemes for day care in centres or in association with residential homes have increased, and experience of these methods has been valuable in helping to establish criteria for obtaining the right environment. A recently published report on the Day Care Service in St. Pancras, based on a good neighbour plan of care has provided useful information. The steadily increasing amount of medical and social care now available in the home has the natural consequence that independence is finally relinquished only at a later age and with greater infirmity than formerly. Those entering old people's homes are accordingly older and often more physically and mentally infirm than was the case 10–15 years ago. This gradual change in type of resident in residential homes affects both the staff and the facilities required and both need constant review.

HEALTH IN WALES

Chapter XIII presents the customary annual review of the special features of health and health services in Wales. There are differences from the experience and record in England and this commentary, prepared by the medical member of the Welsh Board of Health, is the only annual record of them.

The incidence of notifiable infectious diseases was notable for the complete absence of diphtheria and the sharp reduction in poliomyelitis. On the other hand, an outbreak of food poisoning occurred in a Holiday Camp and dragged on for seven weeks. The most probable explanation appeared to be contamination with *Cl. Welchii* of meat products which were partially cooked and then reheated on the following day. 500 of the 7,000 campers in residence during the seven weeks period were affected, but attention to food preparation appears to have halted the outbreak.

The figures for venereal disease in the Principality make an interesting comparison with those in England. The sharp rise in gonorrhoea observed in venereal disease clinics in England since the middle fifties is not so apparent in Wales. The special problem of London, of course, weights the figures for England as does the larger number of immigrants, and a better comparison would be provided by a provincial English region.

An interesting review is given of the progress in Welsh services since 1949. Hospital services which were particularly backward in some parts of Wales have received proportionately greater development than the better provided areas of England and this is reflected in a 62 per cent increase in admissions, a fall of over 40 per cent in waiting lists and trebling the service of diagnostic departments.

Tuberculosis has long been a special problem in Wales and, as is to be expected, England still has an advantage. Nonetheless Wales is following the same path of progressive reduction in the incidence of this centuries-old epidemic. That much remains to be done is well illustrated by the relatively high rates of positive tuberculin tests in 13 year-olds and high notification rates recorded in some large areas.

The continued shortage of midwives in Wales is also discussed in Chapter XIII. This is apparent in both hospital and local authority services. More midwives are required in hospital maternity units because the number of hospital confinements is increasing, yet there are insufficient midwives trained in Wales to maintain the existing establishment. In 1962 there were 1,283 hospital maternity beds as against 1,060 in 1949. Many recruits to hospital midwifery are recently qualified or require refresher instruction before resuming the practice of their profession, and about 30 per cent of them are able to give part-time service only. During the last three years, 153 trained midwives have entered the local authority service, but 176 have left. Although the number of domiciliary confinements shows a tendency to decline, patients who are discharged earlier from hospital require attention from the domiciliary service. A particularly disturbing feature is the age distribution of midwives in Wales; 33·4 per cent are over 50 years of age compared with 25·3 per cent in England and Wales, and in the local authority service this figure is 44 per cent for Wales.

ARTIFICIAL LIMB SERVICE

The Artificial Limb Service provided 21,000 new limbs in 1963 compared with 15,000 in 1962. This increase was largely due to the replacement of the conventional limb by the new patellar tendon bearing limb for below-knee amputees. Since 1959 a rise of 25 per cent in the annual intake of new patients has been mainly due to increasing numbers of patients over 60 years, and this group comprised 59·3 per cent of the total intake in 1963.

Peripheral vascular disease was the reason for 52 per cent of all primary amputations referred and 78 per cent of those caused by disease. In the group of cases resulting from trauma, 46·7 per cent of the patients had suffered traffic accidents in civilian life and 37 per cent industrial injury. The proportion of patients referred as a result of an industrial accident remained constant. However, the thalidomide incident was responsible for a rise from 5·1 per cent to 6·5 per cent in the proportion of patients with congenital abnormalities. A full report has been published in the series on Public Health and Medical Subjects (No. 112) and a short review of the prosthetic problems of children with this type of deformity is given in Chapter XIV. The arms were affected in some six-sevenths of these children and the legs in some two-thirds. Thirty of them had the most severe defects of all four limbs.

Considerable progress was made during the year in the use of powered arms for these patients, first with the type devised at Heidelberg and increasingly later with the power unit, developed by the Medical Research Council at West Hendon Hospital. As successful management depends upon prolonged and close association between these children and the limb fitting team, the in-patient facilities at Oxford and Chailey are being supplemented by a new unit now being built at Alder Hey Children's Hospital, Liverpool, and additions to the unit at Queen Mary's Hospital, Roehampton. A useful film was produced illustrating the early application of powered prostheses.

The account of some research projects investigated during the year reveals the widening interest of engineering and orthopaedic establishments in the problems of biomechanics which should be of great value in the development of better prostheses. The research group at Roehampton has benefited greatly from this and from visits to centres in Europe and North America by members of the staff. A national prosthetic service can make new developments generally available, but it requires the stimulus and help of outside research in this country and abroad to ensure that standardisation does not restrict progress. In addition to the work on powered prostheses, considerable advances were made in conventional artificial legs, especially in the introduction of the new methods of weight bearing for above and below knee limbs. Work continues on the Metalastik Ankle which provides movement in all directions, the SACH foot (solid ankle—cushion heel) and various knee mechanisms.

There is no doubt that the limb fitting services has become much better linked with orthopaedic surgery in the last decade—a process in which Sir Walter Mercer, Mr. Jackson Burrows, Sir Herbert Seddon and Mr. Leon Gillis have given particular help. Sir Walter's long association with work for pensioners came to an end with his resignation from the Chair of the Standing Advisory Committee, an office in which he had given the greatest help to the Ministry during its first decade of responsibility for the service. It is hoped that the progressive movement of centres to hospitals will permit closer integration with orthopaedic departments, including sharing of staff.

TRENDS IN HOSPITAL DESIGN AND EQUIPMENT

Chapter XV discusses the present position of patient monitoring and laboratory automation in hospitals, considers the provision of a comprehensive clinical measurement service at a hospital and includes a brief note on the "medical" use of computers.

Improvements in equipment and technique now make it possible to monitor an increasing range of parameters and to extend this service to ward patients. There are drawbacks to this extension and at the moment the main uses of patient monitoring systems appear to be in the operating theatre and the intensive care ward. Some hospitals are beginning to develop special departments of measurement and instrumentation under one consultant as a service to various clinical departments. This development will probably extend fairly quickly, for there is reason to believe that a wide range of engineering and physical techniques have medical applications which have been little exploited so far.

Laboratory automation may also develop so that one central automated laboratory could serve a number of hospitals in the area, at least for certain chemical analyses; and for smaller hospitals which are geographically isolated a number of semi-automated devices which may speed up work and increase output are being developed.

Computers are already being used for many non-medical purposes in the Health Service and for statistical analyses for medical purposes. Even this last use is only in the earliest stages, and it is to be expected that prompt provision of analyses of clinical activity will become a more common and increasingly valuable feature as facilities are extended. There are other developments of the analogue computer—clinical service which are still in an experimental stage and it would be premature to forecast their future value. The need for further study in this field is obvious and a joint interest of the M.R.C. and the Ministry.

GENERAL PRACTICE

The rôle of family doctors in the community was described by a Sub-Committee of the Standing Medical Advisory Committee of the Central Health Services Council, under the Chairmanship of Dr. Annis Gillie, whose report, published in October, 1963, is briefly discussed in Chapter XVI. The availability of their own doctor to every family is the basis of the National Health Service. Medical science has greatly changed, especially in the last sixteen years, and this has necessitated changes in the pattern of practice. It has rendered impossible the old concepts of the self-sufficient doctor in or out of hospital. The British pattern of general practice is not the only or necessarily in all circumstances the best way of providing first instance medical care or the continuity of medical advice and treatment which is the essential family requirement. Other countries have met the need in other ways, but the Gillie report presents a convincing case for continuing, though improving, the British method. That there is a need to review the organisation is apparent from much that has been said and written, but there are already numerous examples of what can be done and the need is to facilitate and improve upon best current practice in ways that do not impede or penalise the doctor. One development that has become firmly established in many areas is the attachment of health visitors and other local authority nursing staff to group practices. In Oxford where this movement made early progress, all the health visitors and general practitioners had such an arrangement by the end of the year.

During 1963, the General Medical Services Advisory Service, Limited, was set up to advise family doctors on the design, conversion and equipment of premises. It resulted from a co-operative effort involving the British Medical Association, the College of General Practitioners and the Medical Practitioners' Union. The Group Practice loans scheme has already assisted roughly one in fifteen of all family doctors to provide improved premises and this advisory service may give much needed help in organisation.

THERAPEUTIC AGENTS CONTROL AND TOXICOLOGY

The Final Report of the Joint Sub-Committee on the measures needed to improve the safety control of drugs was received during the year. Since then considerable progress has been made towards improving the control of the safety and quality of therapeutic agents and the new measures introduced in 1963 are described in Chapter XVII.

The Committee on the Safety of Drugs under the Chairmanship of Sir Derrick Dunlop was appointed in June with terms of reference relating to toxicity testing of new drugs prior to their submission for clinical trial; appraisal of the results of clinical trials; the analysis of reports of adverse effects of drugs in use and advice to doctors, the industry and Ministers. The Committee has recruited its own medical staff and has already issued advice to industry and the professions on its own authority. It has been at pains to establish a position of absolute impartiality. The Committee set up three Sub-Committees dealing with (i) toxicity, (ii) clinical trials and therapeutic efficiency, and (iii) adverse reactions and, together with its three Sub-Committees, undertook much preparatory work in the second half of the year. It was able to introduce the routine scrutiny of all new drugs before release from 1st January, 1964. These arrangements are voluntary, but are accepted by the professions and industry alike. They depend

upon the readiness of a group of distinguished experts, who make up the Committee and its Sub-Committees to undertake, in a voluntary capacity, a volume of extra work, realised by few. It is a pleasure to pay tribute to the skill and firmness with which the Chairman has established the authority and effectiveness of his Committee's work.

In 1963, the long awaited consolidated regulations were made under the Therapeutic Substances Act, 1956, Part I, relating to the manufacture and importation of certain substances, such as hormones, enzymes, injectable antibiotics, sera and antitoxins, which cannot be suitably tested by chemical means. Amendments to these regulations will be required with increasing frequency to keep pace with advances in medical research, but this latest consolidation has been designed to make it easier to apply such further amendments. The help of the staff of the National Institute for Medical Research is gratefully acknowledged.

National Poisons Information Centres opened in London, Edinburgh and Belfast in September, 1963. They maintain information on some 6,000 poisons and respond to emergency calls by doctors at any hour. During the first four months, the London Centre at Guy's Hospital received about 40 enquiries each week. Most of these concerned incidents involving drugs and household products, such as detergents, bleaches and perfumes. Drugs proved by far the greatest hazard and were the cause of some fatalities. Pesticides and agricultural chemicals rarely gave rise to any trouble.

VACCINATION AND IMMUNISATION

Chapter XVIII reviews the present status of vaccination and immunisation against the acute infections. We have passed through a series of campaigns or gradually evolving general programmes of prophylaxis until we now have an orderly series of preventive measures against whooping cough, diphtheria, tetanus, poliomyelitis, smallpox and tuberculosis advocated for all children and provided in every area. There have been changes in timing and in the antigens used, but there is general acceptance that children should have protection against these diseases.

Only smallpox vaccination attracts serious opposition and the balance of authoritative opinion as expressed in the Joint Committee on Vaccination and Immunisation and in its sub-committee on smallpox is in favour of routine vaccination in the second year of life. Some sincere and well-informed people hold the contrary view, but it is unhappily true that such views have sometimes been expressed in colourful language and with a degree of heat that obscures the rational appraisal of the subject. Adverse reactions can and do occur, but with such rarity and often with such dubiety as to their genuine attribution to vaccinia that the abandonment of such protection as vaccination confers before the advent of a safe and reliable killed antigen seems unacceptable in a world which still has so many areas of endemic prevalence of smallpox. This country would be alone in such an action if it were taken.

The development of combined killed antigens against whooping cough, diphtheria, tetanus, smallpox, poliomyelitis and measles protecting in the first year of life and permitting reinforcement with live vaccines later, where appropriate, would be the ideal outcome of present research. It is to be hoped that

this may prove practicable within the next few years. Before then we may well have a vaccine, effective and free from complications, which may make it possible to break the biennial cycle of measles epidemics. Unlike the other diseases, except whooping cough, measles is only spread by patients with the clinical illness and an effective vaccine could abruptly end a cycle of infection which has been predictable for generations and has affected a majority of children. Although measles vaccines are available the combination of safety and efficacy required seemed, at the time of writing, tantalisingly close, but perhaps not close enough for general use in 1964.

ARTERIOSCLEROTIC HEART DISEASE

The significance of the increasing number of deaths ascribed in recent years to arteriosclerotic heart disease including coronary artery disease is discussed in Chapter XIX. Examination of mortality statistics indicates that this increase is not solely due to the increasing age of the population, because there has been an increase in both sexes in all age groups over 25. Improved diagnosis and a growing awareness of ischaemic heart disease as a cause of death has been responsible for part of the increase; examination of the Standardised Mortality Ratios for myocardial degeneration and arteriosclerotic heart disease suggests that in recent years there has been some transference from the former assigned cause of death, to the latter. However, if the combined death rate from arteriosclerotic heart disease and myocardial degeneration for persons aged 45–64 years is compared for 1952, 1957 and 1962, suggestive evidence that there has been a real increase in the incidence of ischaemic heart disease is obtained.

Analysis of morbidity statistics cannot be regarded as a reliable guide to the trend of the disease. From 1955 to 1961 the available figures indicate an increase in the number of discharges from hospital of patients with ischaemic heart disease by more than 130 per cent, but no movement towards increasing admission of young patients with this complaint to hospital. As the recorded mortality from ischaemic heart disease is higher in the north of the country, and as there is no indication that there is a preponderance of increased discharges in these areas, it seems likely that discharge rates from hospital are influenced by local hospital factors in such a way as to make them an inaccurate guide to the occurrence of a particular disease. The marked difference between the Leeds and Sheffield regions is noteworthy.

The section concludes with a discussion of the present state of knowledge about the causative factors in arteriosclerotic heart disease. Cigarette smoking, lack of physical exercise, gross obesity, high blood pressure and diabetes mellitus appear to be predisposing factors and the first three of these can be controlled by the individual.

SURGICAL OPERATIONS

The number of surgical operations performed on hospital in-patients during 1961 has been analysed, using the information provided by the Hospital Inpatient Enquiry for that year and the findings are discussed in Chapter XIX (*b*). More than a quarter of over two million patients admitted to surgical beds had no operation recorded, partly because reduction of a fracture might not be shown as an "operation". However, the number of surgical beds occupied per

100,000 population in the age group rises sharply for both sexes at ages 45 and above. The changing age structure of the population may therefore call for more surgical facilities. It is of interest to recall that a census taken ten years ago for the committee studying explosions in operating theatres revealed then that some 1·8 millions of general anaesthetics were given each year at that time.

Gastrointestinal and abdominal operations were performed most often and accounted for 368,000 of the total of 1,439,700 operations in 1961. On average, men were more commonly involved than women, though the latter were more frequently subjected to cholecystectomy, femoral herniorraphy and appendicectomy (15–44 age groups only).

There were only slightly more operations for cancer of the breast in women (approximately 10,000) than deaths ascribed to that cause, but there appeared to be more than 400 operations for the same disease in men, though there are only about 70 deaths recorded each year.

The overall picture showed that 67,000 surgical beds were occupied by 2,052,539 patients during the year and 53,000 of them were occupied by patients who had a surgical operation while in hospital.

POSTGRADUATE MEDICAL EDUCATION

Postgraduate education schemes to improve training facilities for junior hospital medical staff and to develop continuing education facilities for general practitioners were launched in 1962 with the help of contributions from the Nuffield Provincial Hospitals Trust and the King Edward Hospital Fund for London. They are now operating in most regions and some receive additional support from funds raised locally. During 1963 arrangements were made for Exchequer Funds to supplement the money provided by these grants. While many district hospitals and medical societies have done good work in this field in the past, the initiative of the North Staffordshire Medical Institute and the Exeter Postgraduate Medical Institute in organising a more comprehensive local service has quickly led to emulation elsewhere. Both have received support from the Nuffield Trust. In Exeter a Director of Postgraduate Medical Education has been appointed and the first organised course of ten weeks intended for general practitioners as well as junior hospital medical staff and overseas graduates was conducted from October to December, 1963. So has organised medical education returned to one of our oldest medical centres, which had a medical school one hundred and twenty years ago.

Refresher courses for general practitioners were authorised by Section 48 of the National Health Service Act, 1946 and were first held in 1948. Since then the number taking part each year has continued to increase, now representing one doctor in four, but the inception of these new schemes should provide fresh impetus. The set course is valuable, but in the context of present day medicine the opportunity for continued learning which the new schemes present should become even more important.

It is encouraging to note the enthusiasm with which these plans have been pursued, for they depend much more on the energy and enthusiasm of individual organisers and teachers than on financial provision. There is probably no more important development in medicine for the next decade. Speciality training is not the main concern of these projects but the Royal Colleges, which have always taken the lead, are actively reviewing present arrangements. The Royal College of Surgeons has issued a report and set up a regional system.

LOCALLY ORGANISED RESEARCH

The support of all the more substantial research for which hospital boards' exchequer funds were used was transferred to the Clinical Research Board within the first few years of its existence. Regional Boards since that time have begun to assist an increasing number of small projects undertaken by hospital staff, and both they and Boards of Governors have used non-exchequer funds on a considerable scale. The regional research committees established to foster this work have done much to improve the quality of work and to guide new entrants to it. In the current financial year, £448,000 from specially allocated exchequer funds is being spent by hospital boards, and it is particularly encouraging that nearly half this effort is provided by Regional Boards. The gain to the health services from these many small projects is as much from the stimulus to the quality of medical work generally as from the immediate contribution to knowledge.

ACKNOWLEDGMENTS

The main function of the medical and associated professional staff of the Ministry is the application of knowledge derived from wide contacts with professional colleagues in this country and abroad to the work of the department, and to the development of policy throughout our health services. On their behalf it gives me great pleasure to acknowledge the unfailing help of many members of the health professions in hospital and domiciliary practice, in administrative work with Hospital Boards, Medical Officers of Health and other local authority staff and members of the staffs of other Departments. We have worked particularly closely with the Medical Research Council and the Scottish Home and Health Department, and have had constant help from our Consultant Advisers.

There is one, however, to whom a special tribute is due. Lord Cohen of Birkenhead was the first Chairman of the Standing Medical Advisory Committee and held that office until his resignation in December. For fourteen years he was an unfailing source of wise counsel to my two predecessors and to me. The value of his work in this capacity stands out in a personal record, second to none in the profession of medicine in Britain. I record the deepest gratitude of the medical staff, and especially of myself, for help beyond measurement and unvarying friendship and support.

This report is the work of my colleagues, and is edited by Dr. J. L. Hunt. While I accept responsibility for the whole, the credit for the work is theirs and I extend my thanks to them for their unfailing support throughout the year.

I am, Sir,

Your obedient Servant,

G. E. GODBER.

I

VITAL STATISTICS

Population

The population of England and Wales was estimated by the Registrar General to be 47,023,000 at mid-1963 (46,709,000 in 1962). This is the home or *de facto* population, and includes armed forces of this or other nations in the country, but does not include members of England and Wales armed forces serving overseas. The increase since mid-1962 was 314,000 and was considerably less than the exceptional increase of 504,000 between mid-1961 and mid-1962.

During 1963 the number of births was higher at 856,000 being 17,000 more than in 1962 (839,000); but due to the cold winter deaths were also higher at 573,000 or 15,000 more than 1962 (558,000) with the result that the net natural increase of population amounted to 283,000 or 2,000 more than in 1962 (281,000). This is 0·60 per cent of the population, the same as in 1962.

Immigration during the first half of 1962 was abnormally high, particularly from Commonwealth countries, presumably in anticipation of the Commonwealth Immigrants Act of that year. During the latter part of 1962 and during 1963 immigration was at a lower rate. An attempt to compare the relative importance of natural increase and immigration gives the following increments in relation to the general population :–

TABLE I.1

	Average 1955–59	1960–61	1961–62	1962–63
	PER CENT			
Population increase annually	0·53	0·98	1·09	0·67
Due to excess of births over deaths	0·44	0·53	0·60	0·58
Balance attributable to migration	0·09	0·45	0·49	0·09

Births and Deaths

Table A.3 in the Appendix at the end of this volume gives a summary of births and deaths in recent years and shows how the increased number of births in recent years compares with the post-war boom in births. The birth rate of 18·2 per thousand population during 1963 is slightly higher than the rate for the previous year, but does not attain the levels reached in 1946 and 1947 (19·2 and 20·5 respectively). Neither the number of children born annually nor the birth

rate have reached the peak of 881,000 births (20·5 per thousand population) attained in 1947. The post-war peak was however of relatively sudden onset and short duration, and it is worth noting that the total number of births over the past four years was 2·6 per cent larger than the total number of births in the four years 1946-49. The current increase in births over eight consecutive years is thus likely to make greater and longer lasting demands on educational facilities and the youth employment market.

The expectation of life at birth remained unaltered at 68 years for a male child and 74 years for a female child. One hundred years ago these expectations were about 41 and 43 years for the two sexes respectively, and even fifty years ago they were only 52 and 55. The expectation of life is however a relatively insensitive measure of health conditions and has changed very little during recent years.

The outstanding change has been in the amount of the increased expectation of life which accrues to infants who have survived the first year of life; one hundred years ago six years were added to their future expectation following survival through the first year while today the increase is less than one.

Death rate in specified age groups

Appendix Table A.4 gives the death rates at various ages for the two sexes, and compares the rates in 1963 with those prevailing in 1953. The changes shown are similar to those noted in previous years; a well marked improvement at younger ages with one outstanding exception, males in their late teens. At older ages, commencing with the age group 55 and over for men and 85 and over for women, mortality experience is slightly worse than in 1953.

Standardised Mortality Ratios

In view of the changing age composition of the population, with increasing proportions both of young children and of the aged, comparison of mortality experience in previous years needs to be based on some method of standardisation. The age-specific death rates of the three years 1950-52 have been taken as the standard and from them the expected deaths for any particular disease can be calculated by multiplying the appropriate standard rates into the current population, age-group by age-group. The percentage ratio of deaths actually recorded to expected number of deaths at all ages, is the Standardised Mortality Ratio (S.M.R.) given in Appendix Table A.6 for a few important diseases.

It will be noted from Table A.6 that the infectious diseases—tuberculosis and syphilis in particular—continue to play a declining rôle in the picture of mortality. By contrast some causes of death show spectacular increases—accidental poisoning by solids and liquids (+129 per cent), cancer of the lung, pneumonia, motor vehicle accidents, and suicide. Leukaemia is also above the 1950-52 level. Diagnoses allocated to the coronary artery disease group have become more frequent, but total deaths attributable to heart disease have not.

The percentage contribution to total deaths of a number of important groups is shown in Table I.2 below.

TABLE I.2

Some causes of death as a percentage of deaths from all causes

ICD No.	Cause	1951	1959	1960	1961	1962	1963
001–019	Tuberculosis	2·5	0·7	0·7	0·6	0·6	0·5
020–138	All other infectious diseases	0·7	0·4	0·4	0·4	0·4	0·4
162–163	Cancer of lung	2·4	4·0	4·2	4·1	4·3	4·3
Rem. of 140–205	All other forms of cancer	13·3	14·4	14·6	14·0	14·0	13·6
420.1	Coronary artery disease	10·5	15·9	17·2	17·0	18·0	18·5
400–402 410–416	Acute rheumatism and rheumatic heart disease	2·0	1·4	1·4	1·4	1·3	1·2
Rem. of 400–468	All other diseases of circulatory system	23·2	19·1	19·2	18·7	18·0	17·6
500–502	Bronchitis	6·8	5·5	5·0	5·7	6·0	6·2
Rem. of 470–527	All other diseases of respiratory system	8·0	7·5	5·8	7·6	7·1	7·8
530–587	Diseases of digestive system	3·1	2·8	2·9	2·8	2·8	2·7
590–637	Disease of genito-urinary system	2·5	2·0	2·0	1·9	1·8	1·7
E810–E825	Motor traffic accidents	0·8	1·1	1·2	1·2	1·1	1·1
Rem. of E800–E999	Other accidents, poisonings, and violence	2·8	3·2	3·1	3·0	3·2	3·2

Causes of Death

Deaths from the principal causes of disease and violence during each of the past three years are shown in Table A.5 of the Appendix. For purposes of comparison, an annual average covering the three years 1951–53 is also given.

Tuberculosis mortality (63 deaths per million population) is 5 per cent lower than in 1962, and is less than one-third of the death rate ten years ago. Fuller discussion of this disease will be found in Chapter V on page 72.

Deaths from diphtheria (including late effects) during the successive five year periods 1944–48, 1949–53, 1954–58, and 1959–63 have fallen dramatically, viz. 2,454; 221; 46; 33. The decline has become slower, and the 2 deaths in 1963 indicate the difficulty of complete eradication. Whooping cough is another childhood disease in which deaths have been markedly reduced since ten years ago, although over the past few years little change has taken place. Of the other infectious diseases showing a decrease in numbers, the decline in deaths from poliomyelitis is most gratifying (338 in 1953 compared with 39 in 1963), while slight increases have taken place among some intestinal infections (gastro-enteritis deaths—2,479 in 1953 compared with 2,662 in 1963).

Deaths from cancer of the lung continue to increase and now account for 13 per cent of all deaths of men in their fifties. Comparison of population cohorts indicates that the death rates from this disease, which have been increasing over the past 40 years, have become stationary for younger men up to the age of 45, but at older ages death rates and numbers of deaths are still mounting.

TABLE I.3

Cancer: Standardised Mortality Ratios

ICD No.	Cause	Males					Females				
		1931	1951	1961	1962	1963	1931	1951	1961	1962	1963
162, 163	Cancer of lung ..	19	101	156	160	164	44	99	140	145	152
204	Leukaemia	45	96	126	123	133	45	104	125	131	131
Rem. 140–205	Other forms of cancer	114	101	91	91	91	115	98	92	92	91
104–205	All forms of cancer	86	101	108	109	110	108	99	96	96	96

The excess of deaths during 1963 compared with previous years appears to be related to the unusually severe wintry conditions in the early part of the year. Deaths from influenza were low during the first two months of the year and although a considerable prevalence then developed the annual total was less than in recent years.

TABLE I.4

Deaths during successive fortnights of the year

	Year	Weeks						Total in first 12 weeks
		1, 2	3, 4	5, 6	7, 8	9, 10	11, 12	
		(in hundreds)						
Deaths from all causes	1961	289	311	354	284	235	214	1,687
	1962	385	297	243	232	246	252	1,655
	1963	291	316	334	316	332	294	1,882
		(actual number)						
Deaths from influenza	1961	396	1,057	2,621	1,541	538	184	6,337
	1962	1,315	831	276	117	97	87	2,723
	1963	100	111	161	344	712	776	2,204

The heavier general mortality cannot therefore be ascribed entirely to epidemic respiratory infection, although there was an excess of four thousand deaths from pneumonia and three thousand deaths from bronchitis in the first quarter of the year.

Mortality was particularly high among old people. During February deaths in London among persons aged 75 and over were 91 per cent in excess of the number in the previous year, and at ages 65–74 they were 50 per cent higher. During the cold spell, and before influenza appeared in epidemic form, there were increased numbers of deaths attributed to coronary artery disease and arteriosclerosis or other myocardial degeneration; and the syndrome of accidental hypothermia in old persons was seen.

Maternal Mortality

The reduction in maternal mortality to a level less than one-half of that prevailing ten years ago has made further reduction a more difficult matter and the significance of yearly changes less certain. Yet further reduction is certainly possible. Maternal deaths for 1963 have fallen to 243, compared with 299 in 1962 and 274 in 1961.

	1953	1960	1961	1962	1963
Maternal deaths per 100,000 total births ..	71	39	33	35	28

About one-fifth of these deaths are associated with abortion; though declining in numbers, they are perhaps not declining quite so much as mortality at term. The greatest improvement has been obtained with toxaemia of pregnancy. Fuller details and discussion are given in Chapter VII and Appendix Tables (A7) and (A8). Deaths attributed to other conditions which occurred during pregnancy or childbirth have decreased in numbers. They are both set out below.

	1953	1960	1961	1962	1963
Maternal deaths (so assigned)	495	310	274	299	243
Associated deaths	128	75	71	77	67

Table I.5 below gives maternal mortality rates in recent years in several countries.

TABLE I.5

International Comparison of Maternal Mortality
Deaths per 100,000 live births

	1950–52	1959	1960	1961	1962	1963
England and Wales	82	39	39	34	36	28
Scotland	109	36	35	37	40	..
Netherlands	89	50	39	38	33	..
Sweden	69	24	37	21*	..	..
Denmark	69	43	30	22*	21*	..
New Zealand†	77	49	34	33	..	..
Australia	94	46	53	45	..	..
United States	75	36	32	32	..	..

* Provisional
† Excludes Maori population

Stillbirths

In spite of the greater number of live births in 1963 the number of stillbirths declined from 15,464 in 1962 to 15,000 (p). The steady decline in the proportion of stillbirths in every 1,000 total (live and still) births has continued.

	1953	1959	1960	1961	1962	1963
Stillbirth rate	22·4	20·8	19·8	19·0	18·1	17·2(p)

The improvement between 1961 and 1962 is found to have occurred at all maternal ages and parities with the possible exception of high multiparous

mothers and those aged 45 and over. There is a complex inter-relationship between cause of stillbirth and duration of pregnancy. The accompanying table (I.6) shows the conditions which may lead to intervention, or are found after delivery at various durations of gestation; it is based on the analysis of stillbirths in 1962 given in Table 23E of the Registrar General's Statistical Review, Part I.

TABLE I.6

(Based on 1962 data)

Selected cause of stillbirths as percentage of all stillbirths according to length of gestation

ICD No.	Cause	Duration of pregnancy (weeks)					All durations
		28–31	32–35	36–39	40	41 and over	
Y 30	Chronic disease in mother	3·6	3·8	3·5	1·7	2·0	3·0
Y 32.2, Y 36.2	Haemorrhage and premature separation of placenta	10·7	14·1	11·6	7·2	3·4	10·8
Y 32.3–4	Toxaemias of pregnancy	17·1	19·0	16·6	8·4	6·9	14·0
Y 34.1	Difficult labour with disproportion	2·4	1·4	1·3	1·8	1·6	1·7
Y 34.2	Difficult labour with malposition	1·9	1·7	3·3	7·0	4·7	3·8
Y 36.0	Cord conditions	2·7	2·6	6·8	15·4	13·1	8·0
Y 37	Birth injuries	0·8	0·8	1·8	5·0	4·6	2·6
Y 38.0	Anencephalus	11·3	16·7	10·6	4·9	4·6	10·1
Y 38.1–3	Other malformations of nervous system ..	3·7	4·0	6·9	8·8	6·2	6·1
Y 39.2	Erythroblastosis	4·9	5·8	5·8	2·5	0·3	4·3
Y 39.4	Maceration	7·5	7·8	6·4	5·8	5·3	6·4
Total number of stillbirths		1,857	3,198	4,472	3,434	1,575	15,464

Infant Mortality

With the rising birth rate, deaths of infants under the age of one year (18,042) are still above the lowest number recorded in 1956; but the infant mortality rate is gradually being reduced and at 21·1 in 1963 was the lowest ever recorded in England and Wales. The corresponding deaths and rate in 1962 were 18,187 and 21·7 per thousand live births.

When attempts were first made to reduce the wastage of infants, it was found that mortality in later months of infancy, influenced more by environmental conditions, fell the more markedly. Table I.7 shows that between 1930–32 and 1961 later infant mortality (after the first week of life) fell to one-fifth of its previous level, but early neonatal mortality (under one week) was far more resistant. In recent years, however, earlier mortality has improved whereas that for the later age period has shown a slight increase.

Perinatal mortality has continued to decline.

TABLE I.7

Stillbirths, perinatal mortality and later infant mortality per 1,000 *total births*
Total infant mortality and early neonatal mortality per 1,000 *live births*

	1930–32	1940–42	1950–52	1961	1962	1963
Perinatal mortality	62·3	54·8	37·7	32·0	30·8	29·3
Stillbirths	41·0	35·1	22·8	19·0	18·1	17·2(p)
Early neonatal mortality (under 1 week)..	22·2	20·5	15·3	13·3	13·0	12·3
Later infant mortality (1 week–1 year)	39·9	33·8	13·5	8·0	8·5	8·7
Total infant mortality.. ..	63·5	55·8	29·0	21·4	21·7	21·1

NOTE: Fuller details are given in Part III (Commentary) of the Registrar General's Statistical Review.

The causes of infant mortality after the first week of life fall into contrasting groups. Congenital malformations have been receiving more searching attention; this may have led to more deaths being attributed to this cause, and therapeutic endeavours may have delayed death until later in infancy. Various forms of infection occur (including possibly some deaths ascribed to accidental suffocation): some have fallen dramatically (see Table I.8) but others such as pneumonia remain as a hard core, perhaps due to drug resistant organisms.

TABLE I.8

Causes of infant death after first month of life
Deaths per 100,000 live births

ICD No.	Cause of death	1951	1959	1960	1961	1962	1963
001–138	Infective diseases	97	23	19	21	18	21
140–239	Neoplasms	10	8	8	8	8	8
340–345	Inflammatory disease of central nervous system	..	13	13	19	18	17
490–493	Pneumonia	372	197	214	198	220	255
500–502	Bronchitis	63	49	43	36	45	51
571	Gastro-enteritis	109	34	38	40	47	39
	Congenital malformations:						
751	Spina bifida	29	35	31	30	26	30*
752	Congenital hydrocephalus	18	29	29	25	24	7*
754	Heart and vessels	61	78	73	78	79	82
Rem. 750–759	Other congenital malformations	46	28	32	31	33	28
E921–E926	Accidental suffocation	75	38	37	37	45	43
Rem. 001–E999	All other causes	(216)	102	92	87	97	105
	ALL CAUSES	1,097	634	628	610	659	685

NOTE: Based on data in Table 27 of Part I of the Registrar General's Statistical Review.

* A change of coding practice introduced in 1963 transferred to Spina Bifida jointly-stated conditions previously assigned to Congenital Hydrocephalus.

A comparison with countries with the lowest rates (Table I.9) indicates that there are still prospects of further reduction in infant mortality.

TABLE I.9

National comparisons of infant mortality rates
Rate per 1,000 live births

	1951–55	1956–60	1960	1961	1962	1963
England and Wales ..	27	23	22	21	22	21
Australia	23	21	20	20	20	..
New Zealand	22*	20*	20*	19*	20	..
Netherlands	22	17	17	15	15(p)	..
Sweden	19	17	17	16	15(p)	..
Finland	32	25	21	21	19(p)	..

* Excludes Maori population.

Mortality trends

The table of Principal Mortality Statistics (I.10) shows how the Standardised Mortality Ratio, making allowance for the change in population structure, has fallen considerably since 1931, although the crude unstandardised rate is almost the same. The increased proportion of infants and old people in the community explains this phenomenon. The increased proportion of old people can also account for the rise in death rates from cancer other than lung cancer.

TABLE I.10

Principal Mortality Statistics, 1931–1963, England and Wales

	1931	1941	1951	1961	1962	1963
Deaths from all causes						
Rate per 1,000 living ..	12·29	13·54	12·54	11·95	11·95	12·18
S.M.R. (1950–2)=100 ..	142	126	106	92	92	94
Stillbirths						
Rate per 1,000 total births	40·9	34·8	23·0	19·0	18·1	17·2
Infant deaths						
Rate per 1,000 live births	66·4	59·7	29·9	21·4	21·7	21·1
Child deaths, age 1–14						
Rate per 1,000 living ..	3·34	2·73	0·80	0·53	0·51	0·53
Maternal deaths						
Rate per 1,000 total births	4·11	2·80	0·75	0·33	0·35	0·28
Deaths by cause						
Rate per million living						
Diphtheria	65·3	68·2	0·68	0·22	0·04	0·04
Acute poliomyelitis ..	2·48	4·13	4·36	1·28	0·39	0·15
Tuberculosis, all forms	874	730	315	72	66	63
Lung cancer	57	132	301	494	510	520
All other cancer	1,427	1,527	1,663	1,670	1,668	1,658

Notifiable Infectious Diseases

There were fewer cases notified in 1963 of tuberculosis (18,950), and poliomyelitis (51).

Increased notifications were received of measles (601,111) which has a two-yearly epidemic cycle, whooping cough (34,736) and scarlet fever (17,437). Notifications were also higher for alimentary infections, dysentery (31,731), typhoid (242) and paratyphoid (340).

Comparative figures for previous years are given in Appendix Table A.14 and fuller discussion appears in the following chapters.

TABLE I.11

International comparison of death rates per 1,000 population

Age-group (years)	England & Wales 1963	Belgium 1960	France 1961	Germany F.R. 1961	Italy 1960	Netherlands 1961	U.S.A. 1961	U.S.S.R. 1960–61
0–4	5·3	7·3	6·3	8·2	11·2	4·1	6·0	9·9
5–	0·4	0·5	0·4	0·5	0·6	0·5	0·5	1·0
10–	0·3	0·4	0·3	0·4	0·5	0·3	0·4	0·7
15–	0·6	0·7	0·7	0·9	0·8	0·5	0·9	1·2
20–	0·8	1·1	1·0	1·3	1·0	0·7	1·2	1·7
25–	0·8	1·1	1·3	1·2	1·2	0·7	1·2	2·1
30–	1·0	1·3	1·6	1·4	1·4	0·8	1·6	2·7
35–	1·6	1·7	2·2	1·9	1·9	1·3	2·3	3·0
40–	2·6	2·8	3·1	2·8	2·8	2·1	3·6	3·7
45–	4·5	4·8	5·0	4·4	4·4	3·4	5·7	5·4
50–	7·3	7·8	7·6	7·1	7·0	5·8	9·1	7·5
55–	12·5	12·9	11·7	11·8	11·3	9·1	13·3	10·9
60–	20·9	20·4	17·6	19·1	17·7	14·7	20·9	16·6
65–	31·9	31·3	25·3	30·2	28·5	24·2	31·0	24·5
70 and over	92	92	78	85	85	75	76	63
All ages	12·2	12·4	10·9	11·0	9·6	7·6	9·3	7·2
Population density per square kilometre	306	300	83	217	164	346	20	10

Death rates for five year age groups, both sexes combined, are given in Table I.11 alongside comparable rates for a few other countries. It will be noted that the rates for England and Wales compare favourably with most others at younger ages; but in later life, after the age of 55, mortality in this country is generally higher than elsewhere. This situation which is also true of earlier years may be due in part to different proportions of males/females, or to an older average age in the 70 years and over group; it may also reflect the accumulative results of life in urbanized industrial communities.

II

GENERAL EPIDEMIOLOGY

TABLE II.1

Acute Encephalitis

Corrected notifications by age and sex 1963

Age	Infective Encephalitis			Post infectious Encephalitis		
	Male	Female	Total	Male	Female	Total
0–	18	13	31	24	25	49
5–	31	17	48	55	34	89
15–	19	17	36	17	6	23
45–	4	2	6	1	2	3
65–	..	1	1	..	..	..
Unknown	2	1	3	1	..	1
All ages	74	51	125	98	67	165

In 1963 corrected notifications of infective encephalitis numbered 125 and of post infectious encephalitis 165. The number of deaths attributed to acute infectious encephalitis was 87 distributed by age as follows: 0–4 years 33; 5–14 years 11; 15–44 years 20; 45 years and over 23. Deaths from post infectious encephalitis are not separately recorded but are included with others forms of encephalitis in No. 343 of the International Statistical Classification of Diseases, Injuries and Causes of Death. In this group there were 132 deaths, the age distribution being: 0–4 years 30; 5–14 years 15; 15–44 years 34; 45 years and over 53. The aetiology of some of these illnesses remains obscure and the diagnosis must sometimes be doubtful, especially in infants.

Anthrax

Fifteen cases of anthrax were notified to medical officers of health during 1963; one patient died of the disease. Six of these cases were connected with imported wool—three of them, one fatal, occurred in one establishment.

Two cases were associated with bone or bone products. One of the affected persons was employed in a factory processing dried bones from India; the other was a dock labourer who worked at a wharf where a variety of imported animal products are handled.

Another dock worker was presumably infected whilst loading cargo into a hold from which imported hides had recently been discharged and a sailor, who had cleaned up a deck space following the discharge of a cargo of wool and hides, was infected. Of the remaining five cases, two were in farm workers, two were in retail butchers and one in a slaughterman. In none of these five cases was any association with anthrax established.

TABLE II.2

Diphtheria

	Annual average 1916–25	Annual average 1933–42	1954	1955	1956	1957	1958	1959	1960	1961ø	1962	1963
Corrected notification* ..	51,753†	55,125†	173	155	53	37	80	102	49	52	16	33
Deaths‡	4,214	2,783	8	12	3	4	8	0	5	10	2	2
Fatality ratio (deaths per 100 notifications ..	8·2	5·4	4·6	7·7	5·7	10·8	10·0	0·0	10·2	19·2	12·5	6·1

* Including original notifications from Port Health Districts (1954, 7; 1955, 1; 1956, 2; 1957, nil; 1958, 2; 1959, nil; 1960, nil; 1961, 1; 1962, nil; 1963, nil).

† Partially corrected.

‡ Figures from 1954 to 1957 included deaths occurring when the interval between the onset of the disease exceeded one year. These have since been excluded.

ø Revised figures.

Diphtheria notifications were higher than for last year due to 6 small outbreaks associated with schools in different parts of the country.

1. Four schools in Southwark were involved in an outbreak which commenced in June and which gave rise to a total of 8 cases (7 in school children and 1 in a pre-school child). Screening of home and school contacts brought to light 26 carriers. A mitis strain of organism was responsible in every instance. The disease was on the whole mild and there were no fatalities.

2. The second outbreak occurred in Keighley during July when a child attending a training centre for the mentally subnormal was found to be infected with an atypical strain of *Corynebacterium diphtheriae*. Initial swabbing of pupils and staff in the centre produced negative results but on repeat swabbing several carriers were discovered, all infected with a similar strain. Extensive swabbing was then carried out in surrounding schools and among home and street contacts of known cases which resulted in 3 more cases and 12 more carriers being discovered. The most recent case occurred in December involving an unimmunised child aged two years who died shortly after admission to hospital. Screening of home contacts revealed that the mother and two siblings were carriers. By the end of December there had been a total of 6 cases (including the fatal case) and 16 carriers, all infected with a similar atypical organism.

3. There was an outbreak in October involving two brothers who attended a school for educationally subnormal children in Finchley. Screening of classmates revealed that one boy who had recently returned from a holiday abroad and who was seated beside one of the brothers in class was a convalescent carrier. A mitis strain was recovered from all three children.

4. During November there were 2 cases in schoolchildren in Halifax and swabbing of home and school contacts brought to light 12 carriers. The organism was similar to that found in Keighley but no connection could be established between the two outbreaks.

5. Four very mild cases due to a mitis strain occurred in a boys' school in Brighton during November. The outbreak was discovered as a result of routine swabbing because of persistent tonsillitis in the school. Swabs from all other boys and members of the staff were negative for diphtheria organisms. The source of the outbreak remained obscure.
6. There was an outbreak in Islington which commenced in November and comprised 6 cases and 7 carriers. Three schools were involved. The first case was seriously ill on admission to hospital having a typical "bull neck" as well as respiratory obstruction which necessitated tracheotomy, but all other cases were mild. A gravis strain of organism was responsible for the outbreak.

TABLE II.3

Age	No record of immunisation	Incomplete or doubtful immunisation or immunisation more than five years before onset	Primary course or reinforcing doses within previous 5 years	Total
0– 1 yr.	..	..	..	..
2– 4 yrs.	5	1	..	6
5– 9 yrs.	7	2	4	13
10–14 yrs.	3	9	1	13
15 years and over	1	..	..	1
Total	16	12	5	33

Of the 2 diphtheria deaths one, as previously mentioned, occurred in an unimmunised child aged one year; the other occurred in a boy aged 7 years who had a doubtful history of immunisation in infancy which had not been reinforced.

The diphtheria immunisation index for 1963, i.e. the percentage of the total number in the appropriate age groups who have completed a course of primary immunisation or have received reinforcing injection within the past 5 years is 57 per cent for children under 15 years and 64 per cent for children under 5 years.

A total of 700,072 children under the age of 15 were immunised in 1963 compared with 652,904 in 1962 and 874,987 in 1961.

Dysentery

TABLE II.4

Dysentery notifications (including non-civilian) 1954–1963

Year	Corrected* Notifications	Deaths†	Fatality Ratio
1954	31,858	39	0·12
1955	36,718	40	0·11
1956	49,009	33	0·07
1957	28,910	22	0·08
1958	38,107	32	0·08
1959	35,626	33	0·09
1960	43,285	36	0·08
1961	20,418	34	0·17
1962	30,924	28	0·09
1963	31,759	35	0·11

* Including original notifications from Port Health Districts.

† These deaths are those assigned to causes 045–048 (Dysentery, all forms) of the 1955 International List. They include deaths from amoebiasis with liver abscess—2 in 1962.

The total number of corrected notifications for 1963 was slightly above the figure for 1962 but still below the average for the past ten years.

TABLE II.5

Corrected notifications, England and Wales, 1963, by quarters and sex

	Male	Female	Total	Percentage of Annual Total
First Quarter ..	5,079	5,273	10,352	32·6
Second Quarter ..	5,212	5,617	10,829	34·1
Third Quarter ..	2,852	2,864	5,716	18·0
Fourth Quarter ..	2,393	2,441	4,834	15·2

There has been an increase in the number of notifications during the first quarter of the year and a corresponding reduction during the fourth quarter as compared with 1962.

TABLE II.6

Notification rates per 100,000 population in England and Wales, 1959–1963

Year	Males				Females				Persons			
	All Ages	0–	5–	15+	All Ages	0–	5–	15+	All Ages	0–	5–	15+
1959	80	368	198	24	77	329	175	36	78	349	187	30
1960	95	385	241	31	94	351	223	45	95	368	232	38
1961	45	205	105	15	43	186	89	21	44	196	97	18
1962	66	299	163	19	66	276	152	29	66	288	158	24
1963	68	266	181	23	67	240	169	32	67	253	175	28

Age and sex distribution follows the pattern noted in previous years.

TABLE II.7

Notifications per 100,000 population in the Standard Regions of England and Wales, 1959–1963

Standard Region	1959	1960	1961	1962	1963
England and Wales	78	95	44	66	67
Northern	48	58	31	52	33
North Western	82	137	55	106	53
East and West Riding	142	125	121	127	66
North Midlands	94	78	44	87	68
Midland	97	45	43	72	50
Eastern	30	133	21	28	60
London and South Eastern ..	76	104	33	54	110
Southern	45	48	26	16	37
South Western	38	91	32	46	67
Wales	116	61	29	38	51

Emphasis has shifted from the North Western Region and East and West Riding, where figures have been halved, to the London and South Eastern Region where the figure is double that for 1962.

TABLE II.8

Notifications per 100,000 population in conurbations and areas outside conurbations 1959-1963

	1959	1960	1961	1962	1963
Conurbations—All	87	113	53	82	85
Tyneside	42	29	9	18	17
West Yorkshire	184	170	164	177	108
South East Yorkshire	83	210	71	140	55
Merseyside	61	69	39	73	52
West Midlands	59	34	25	50	44
Greater London	85	111	39	61	115
Urban areas, 100,000 population and over	135	111	56	84	76
Urban areas of population 50,000 to under 100,000	72	96	36	58	68
Urban areas of population under 50,000	65	79	36	59	53
Rural districts	43	67	34	38	45

There has been a significant drop in the notification rate in West Yorkshire and in South East Lancashire, and a disappointing rise in Greater London. Although, in general, small urban areas and rural districts provide lower rates than conurbations and large urban areas, this year, as in previous years, Tyneside has produced conspicuously the lowest rate.

TABLE II.9

Laboratory findings 1959–1963
(from returns of the Public Health Laboratory Service)

Year	Bacillary dysentery				Amoebic dysentery
	Total Isolations	Sonne per cent	Flexner per cent	Others per cent	Total isolations
1959	32,308	98·9	1·0	0·07	150
1960	39,408	98·4	1·2	0·26	158
1961	18,924	96·0	2·0	0·12	108
1962	32,248	98·2	1·7	0·18	123
1963	32,626	98·2	1·8	0·05	126

As usual Sonne accounts for over 98 per cent of isolations.

Influenza and other Respiratory Diseases

A general increase in morbidity and mortality from respiratory diseases began in the middle of November, 1962 and continued, with minor remissions, throughout the winter of 1962–63. Little evidence of influenza virus infection was obtained until the last week of January when reports of outbreaks of influenza-like illnesses were received, mainly from southern parts of England. These were associated with laboratory evidence of influenza virus A infection. Some strains of virus isolated were similar to the A2 virus last prevalent in England and Wales in 1961, this virus being virtually identical with the original A2 virus, but other strains showed a definite antigenic shift.

During the first three weeks of February, 1963 influenza was largely confined to the London and South Eastern Region. Deaths assigned to influenza in London Administrative County reached a peak of 33 in the week ended 23rd February. Other parts of England and Wales remained relatively unaffected until the last week of February when outbreaks began to be reported from the northern half of the country. The peak of influenza mortality in England and Wales as a whole was reached in the week ended 16th March, by which time the situation in London and the south had markedly improved.

The degree to which influenza virus infection contributed to the total morbidity and mortality from diseases of the respiratory system during this winter is difficult to assess since other factors, such as extreme cold and atmospheric pollution were also involved. The figure facing page 106 shows weekly deaths assigned to pneumonia, bronchitis and influenza, respectively from the week ended 3rd November, 1962, to the week ended 20th April, 1963. The data suggest that causes other than influenza were concerned in the steep rise of mortality from respiratory diseases during the first half of the winter, with peaks in the week ended 15th December, 1962, and in the week ended 2nd February, 1963. In the second half of the winter influenza virus infection played an increasing part and was an important factor in the third and highest peak of respiratory mortality which occurred in the week ended 9th March, 1963.

When compared with other recent winters the experience of 1962–63 showed a considerable increase in deaths from all causes and in deaths assigned to pneumonia or bronchitis. The number of deaths assigned to influenza was decidedly lower than in the winters of 1958–59 or 1960–61. The bulk of the excess deaths from all causes was among elderly persons. New claims to sickness benefit by persons of working age were of the same order of magnitude as in previous winters when influenza virus A2 was prevalent.

Table II.10 shows the averages of the total weekly new claims to sickness benefit in England, Wales and Scotland in successive winters for periods of 15 weeks from about mid-December to the end of March and a similar average for the 15 week period from the week ended 13th August, 1957 to the week ended 19th November, 1957, which covered the main wave of the 1957 influenza epidemic. The data on which these figures are based have been supplied by courtesy of the Ministry of Pensions and National Insurance.

Notifications of acute pneumonia followed the usual seasonal distribution. The corrected figure for each quarter were: 1st quarter 7,368; 2nd quarter 2,723; 3rd quarter 1,457; 4th quarter 2,622; the total for the year was 14,170.

The distribution of deaths attributed to influenza was: 1st quarter 2,562, 2nd quarter 415; 3rd quarter 39; 4th quarter 198. Table II.11 shows the number of deaths attributed to influenza, pneumonia and bronchitis in each of the past eight years.

TABLE II.10

Year	Weeks ended	Average of total weekly new Claims (thousands)	Epidemic Influenza
1956–57	25/12– 2/4	164·5	
1957	13/ 8–19/11	279·1	Virus A2
1957–58	24/12– 1/4	204·3	Virus A2
1958–59	23/12–31/3	248·8	Virus A2 and B
1959–60	22/12–29/3	183·5	
1960–61	20/12–28/3	244·7	Virus A2
1961–62	19/12–27/3	241·7	Virus B
*1962–63	18/12–26/3	246·1	Virus A2

* Provisional

TABLE II.11

Deaths attributed to influenza, pneumonia, and bronchitis 1956–63

	1956	1957	1958	1959	1960	1961	1962	1963
Influenza	2,626	6,716	2,401	7,862	1,098	7,102	3,308	3,214
Pneumonia ..	22,414	22,848	23,738	26,590	24,343	29,275	31,672	36,741
Bronchitis ..	29,909	27,097	29,396	29,051	26,485	31 363	33,293	35,332

Leprosy

Arrangements for the treatment and welfare of leprosy patients notified under the Public Health (Leprosy) Regulations, 1951, continued satisfactorily in 1963. At the end of the year, the Leprosy Register showed 291 cases remaining in England and Wales of whom 169 were classified as quiescent.

TABLE II.12

Malaria

Source	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Contracted abroad	424	264	182	136	113	83	82	88	128	93
Indigenous	..	..	..	1	..	..	..	..	..	1
Induced	..	..	..	109	85	69	81	36	45	46

There were 94 corrected notifications of malaria during 1963; to these may be added 8 notifications from Port Health Authorities which are not subject to correction. All but one of these were contracted abroad; the exception may have been acquired as the result of a blood transfusion although attempts to establish that the donor was infected were unsuccessful.

It appears, from Public Health Laboratory Service records, that more than two-thirds of the infection contracted abroad in 1963 was acquired in Africa.

The 46 cases of induced malaria refer to patients in whom the disease was induced for therapeutic reasons from material provided by the Malaria Reference Laboratory, Horton Hospital, Epsom.

TABLE II.13

Measles

Corrected notifications, deaths and fatality ratios since notifications began

Year	Corrected* Notifications	Deaths	Fatality Ratio†	Year	Corrected* Notifications	Deaths	Fatality Ratio†
1940	409,521‡	857	0·21	1952	389,502	141	0·04
1941	409,715‡	1,145	0·28	1953	545,050	242	0·04
1942	286,341‡	458	0·16	1954	146,995	45	0·03
1943	376,104‡	773	0·21	1955	693,803	174	0·03
1944	158,479	243	0·15	1956	160,556	28	0·02
1945	446,796	729	0·16	1957	633,678	94	0·01
1946	160,402	204	0·13	1958	259,308	49	0·02
1947	393,787	644	0·16	1959	539,524	98	0·02
1948	399,606	327	0·08	1960	159,364	31	0·02
1949	385,935	307	0·08	1961	763,531∅	152	0·02
1950	367,725	221	0·06	1962	184,895	39	0·02
1951	616,192	317	0·05	1963	601,255	127	0·02

* Including original notifications by Port Health Districts.
† Deaths per 100 notifications. The deaths from 1951 to 1957 included those occurring more than one year after onset of measles. Since 1958 these are excluded.
‡ Only partly corrected.
∅ Revised figure.

The biennial rhythm of epidemic incidence continues. The rise which was occurring in the last quarter of 1962 levelled off early in 1963 but the incidence of cases remained high throughout the first six months of that year. The mortality remains low.

Developments in the field of measles vaccines led to the formation of a Sub-Committee of the Joint Committee on Vaccination and Immunisation to consider the medical aspects of measles vaccination and to report to the Joint Committee. The Medical Research Council have been asked to organise trials of measles vaccines.

Meningococcal Infection

1. *Corrected notifications and deaths, 1954–1963 including original notifications from Port Health Districts.*

TABLE II.14

Year	No. of Notifications	No. of Deaths	Fatality Ratio*
1954	1,246	259	20·8
1955	1,126	205	18·2
1956	1,168	189	16·2
1957	1,016	184	18·1
1958	836	145	17·3
1959	746	159	21·3
1960	632	95	15·0
1961	651	130	20·0
1962	576	138	24·0
1963	606	146	24·1

* Deaths per 100 notifications.

Corrected notifications and deaths were up on the previous year. The fatality ratio was 24·1, slightly higher than for 1962 which in turn was the highest for 10 years.

2. *Notification rates by ages per 100,000 population (excluding Port Health Districts).*

TABLE II.15

Year	All ages	0–	5–	15 years and over
1954	2·8	23·5	3·7	0·6
1955	2·5	21·2	3·4	0·6
1956	2·6	20·2	3·5	0·8
1957	2·3	19·4	2·7	0·5
1958	1·9	16·1	1·8	0·5
1959	1·6	13·0	2·3	0·4
1960	1·4	10·5	1·9	0·4
1961	1·4	11·2	1·7	0·3
1962	1·2	9·0	1·4	0·4
1963	1·3	9·4	1·7	0·3

Total notifications by age expressed as percentages of all corrected notifications were:—

0– 4 years ..	60·2	5–14 years ..	18·8
15–24 years ..	9·2	25 years and over	11·7

3. *Fatality ratios (deaths per 100 notifications) in several age groups*

All ages	24·1
0– 4 years ..	30·1
5–14 years ..	5·3
15 years and over	23·6

As in previous years incidence and fatality ratio of meningococcal infection was highest in children under 5 years of age.

Poliomyelitis

TABLE II.16

Corrected notifications and deaths, England and Wales, 1954–63

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Paralytic..	1,319	3,712	1,717	3,177	1,419	739	257	707	212	39
Non-Paralytic ..	641	2,619	1,483	1,667	575	289	121	169	59	12
Total notifications*	1,960	6,331	3,200	4,844	1,994	1,028	378	876	271	51
Total deaths† ..	134	270	137	255	154	87	46	79	45	39

* Including original notifications from Port Health Districts.

† Including deaths from late effects of poliomyelitis which in years 1954–63 numbered 22, 29, 23, 29, 25, 21, 23, 20, 27 and 32 respectively.

Incidence

During 1963 the incidence of notified cases of poliomyelitis fell dramatically to 1·1 per million of the population—the lowest ever recorded. The trend of provisional notifications week by week throughout the year revealed virtually no seasonal flux, and in no single week were double figures reached. The only counties experiencing five or more cases were Lancashire (11), Yorkshire (6) and Essex (5). There were no outbreaks and only rare instances in which two cases could be linked epidemiologically.

The distribution of cases by age was as follows: 22 were under five years of age, 15 were five to fourteen years of age inclusive, and 14 were 15 years of age or more.

Deaths

The number of deaths, excluding those due to late effects was 7. The ages of the patients who died were:—

0–	..	25–	2
5–	1	30–	2
10–	0	35–	1
15–	0	40–	1
20–	0	45–	0

Vaccination against poliomyelitis (see Chapter XVIII)

Routine vaccination continued and oral vaccine was in the main used for this purpose. Certain additional recommendations were made during the year to reinforce the protection offered to children, especially on entering school for the first time, and to other persons at special risk.

By the year's end 18·9 million persons had received a "primary" course of immunisation consisting of either 2 doses of Salk vaccine or 3 doses of oral vaccine. Of these 11·9 million were aged 10 or under at the time of immunisation, 3½ million were aged 11–20 and 3½ million were over 20 years of age.

It was decided in June, 1963, on expert advice, that there were no indications for mounting a national campaign to give oral polio vaccine to all children and this decision was justified by events. However, it was recommended that medical officers of health should consider arranging for a single dose of oral polio vaccine to be offered to children, and others, who were likely to have been exposed to the same source of infection as individual notified cases, and this was done in the majority of instances. The rationale is that the vaccine might be expected to give some degree of immunity to those not previously vaccinated, to boost the immunity of those whose previous vaccination had not been completely successful and to block the spread of wild virus by producing an infection with harmless vaccine virus.

Rabies

An immigrant from Pakistan was thought to have died of rabies in England during 1963 and the diagnosis was later confirmed virologically. He had been bitten by a dog in his own country some two months earlier. This is the first case of the disease to be reported in this country since 1956, when one occurred in a person who had been bitten by a rabid dog in India.

Smallpox

TABLE II.17

Year	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Cases	..	..	..	4	6	1	1	2	68	..
Deaths	..	..	..	2	1	..	..	..	26	..
Importations	..	..	..	1	1	..	1	2	6	..

There was no case of smallpox in England and Wales during 1963. In England alone the advice of members of the panel of smallpox opinion was sought in 47 cases when the diagnosis of smallpox was entertained. Of these 25 were chickenpox and the majority of the remainder exhibited sensitivity rashes of one kind or another.

Vaccination against smallpox

The following Table shows the numbers of vaccinations and revaccinations declared by local health authorities to have been performed at different ages under Section 26 of the National Health Service Act, during the years 1954–63.

TABLE II.18

Year	Primary Vaccinations					Re-vaccinations				
	Under 1 Year	1–4 years inclusive	5–14 years inclusive	15 years and over	Total	Under 1 Year	1–4 years inclusive	5–14 years inclusive	15 years and over	Total
1954	234,587	37,924	11,196	20,853	304,460	260	2,831	11,820	58,960	73,871
1955	251,819	36,156	10,690	29,357	309,016	399	2,809	11,936	57,458	73,602
1956	263,939	37,541	11,125	21,195	333,800	574	2,937	10,240	58,531	72,332
1957	303,406	51,906	29,766	39,189	424,627	826	4,679	18,052	90,286	113,843
1958	327,063	38,241	18,929	27,005	421,241	512	3,143	13,569	75,570	92,794
1959	337,310	47,831	14,248	23,433	422,822	679	3,540	10,228	61,471	75,918
1960	312,331	56,521	15,322	24,462	408,636	428	3,379	10,965	66,618	81,420
1961	319,532	82,852	21,188	30,322	452,894	437	3,912	12,927	72,585	89,855
1962	409,195	422,218	976,129	1,423,373	3,230 915	998	70,223	613,699	2,373,354	3,058,274
1963	76,139	79,105	18,480	30,142	203,866	275	4,841	16,938	77,975	100,029

The 1962 figures were high because of the smallpox outbreak in that year. The 1963 figures are low because the change in the recommended age for vaccination from 4–5 months to the second year of life led virtually to a break in the vaccination programmes of many local health authorities. It is expected that the 1964 figures will tend to revert to pre-1962 levels.

Complications of Vaccination

Ten reports were received from local health authorities of complications following vaccinations performed during 1963 under Section 26 of the National Health Service Act. There were no deaths. Seven were of cases of benign generalised vaccinia; four of these were in infants under one year of age, two in children age 1–2 years, and the other was in a woman aged 26 years.

The remaining three cases were of post-vaccinal encephalomyelitis. A boy aged four months became feverish seven days after vaccination, and had a convulsion on the twelfth day, he was admitted to hospital where minimal changes in the cerebro spinal fluid were recorded. A female child, aged fourteen months, was admitted to hospital twelve days after primary vaccination in a semi comatose state. Another girl, aged eighteen months, was admitted to hospital after a generalised convulsion which followed two days of malaise and upper respiratory infection one week after vaccination; in hospital the child was comatose and had five further convulsions; diffuse generalised abnormality was found on electro-encephalographic examination. All three children appear to have made complete recovery.

Tetanus

TABLE II.19

Deaths—Tetanus, 1953–1962

Year	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Deaths assigned to Tetanus	61	37	33	37	28	20	25	18	24	19
Deaths complicated by Tetanus assigned to the injury*	. .	24	15	15	18	21	13	14	17	10
Total	61	61	48	52	46	41	38	32	41	29

* Prior to 1954 all deaths were assigned to tetanus.

The downward trend in total deaths associated with tetanus which was interrupted in 1961 is once more evident, the figure for 1962 being the lowest in the past ten years. It is not possible to state precisely whether this reduction represents a decrease in the incidence of the disease or improvement in methods of treatment, but experience in Leeds in recent years might suggest the latter (Ellis, 1963).

The Joint Committee on Vaccination and Immunisation considered the subject of protection against tetanus and agreed that authoritative advice on active and passive immunisation was needed. As the subject was a complex one and involved matters outside the terms of reference of the Joint Committee, an advisory group was formed to consider it.

REFERENCE

Ellis, M. 1963. *Brit. med. J.*, **i**, 1123.

ENTERIC FEVERS

Typhoid Fever

During 1963 there were four major outbreaks of typhoid fever in England and Wales.

1. Outbreak associated with Zermatt

On 12th March, 1963, three cases of typhoid fever in persons who had recently returned from holiday in Switzerland had been reported. Two were members of a party which travelled by air from Gatwick to Zürich on 16th February, then proceeded without stop by train to Brigue where they spent the night. The following day they continued the journey by train to Zermatt. They returned home on 2nd March. One developed symptoms on 27th February and the other on 3rd March. The third case travelled in a large party which left Gatwick Airport on 14th February and returned on 28th February. The itinerary led to Geneva and thence directly by train to Zermatt.

Detailed enquiries from patients and other holiday makers and from the organisers of the parties regarding itinerary, places visited while on holiday, and food and drink consumed led to the conclusion that Zermatt was the most likely focus of infection but that no one particular hotel or restaurant could be implicated. All medical officers of health in England and Wales were advised of the position on 13th March and alerted to the possibility of typhoid fever in any sick person who had recently visited Zermatt.

With each succeeding day more and more cases were reported and it became evident that a major outbreak of typhoid fever was likely. All cultures from infected persons were sent to the Enteric Reference Laboratory, Central Public Health Laboratory, Colindale Avenue, London, where it was established that the responsible strain of organism in each case was *Salmonella typhi* Vi-phage type E1. Altogether in England and Wales there was a total of 69 bacteriologically confirmed cases of which one, a girl aged 7½ years who had not been out of the country, was probably secondarily infected by her mother who developed typhoid fever after returning from Zermatt.

From the reports of individuals returning from Zermatt it appeared that a non-specific gastro-intestinal illness, lasting 2–3 days, had been prevalent for several weeks before the typhoid outbreak: indeed, it was likely that some genuine typhoid cases also suffered from this illness which may have confused the true date of onset of illness attributable to typhoid fever in some instances.

Figure 1 shows dates of onset of illness in the 68 primary cases. It will be seen that the greatest number of cases developed symptoms on 3rd March, but that one case, a youth aged 19, who was in Zermatt from 28th February until 17th March, became ill only on 8th April. All the primary cases visited Zermatt between the outside limits of 1st February and 17th March. The earliest date on which a confirmed case left Zermatt was 22nd February and the latest arrival at Zermatt of a confirmed case was 28th February; it seems likely, therefore, that infection was present in Zermatt during the last two weeks of February and perhaps for even longer. Table 1 shows that males and females were almost equally affected and that the age group most involved was the 25–40 year olds.

TABLE II.20

Age and sex distribution in 68 cases of typhoid fever associated with Zermatt

Sex	Age in Years				Total
	0–14	15–24	25–40	Over 40	
M.	. .	3	24	8	35
F.	1	10	20	2	33
Total	1	13	44	10	68

Examination of a party of 95 members from England and Wales who were on holiday in Zermatt from 14th-28th February, a period during which it was conjectured that infection was at its height is of interest. Thirty-one

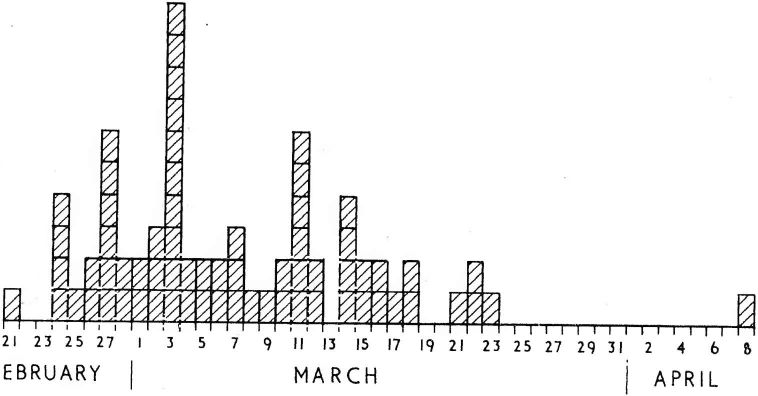

FIG. I. DATES OF ONSET OF ILLNESS IN 68 CASES OF TYPHOID FEVER ASSOCIATED WITH ZERMATT.

members of this party developed typhoid fever, giving an attack rate of 33 per cent. Fifty-seven stayed in one hotel and of these 27 developed typhoid, which gives the very high attack rate of 47 per cent. Figure 2 indicates dates of onset of illness in these cases. It will be noted that the incubation period varied from 7 to at least 23 days. The length of the incubation period may be influenced by several factors, notably the dose of infecting organisms and resistance of the host. In a water-borne outbreak, for example, the infecting dose may be quite small and the incubation period tends to be variable and often prolonged. Another feature of a water-borne outbreak of typhoid fever is that it is often preceded by a wave of non-specific gastro-intestinal illnesses due to pollution of the drinking water by faecal organisms other than typhoid bacilli. There was thus circumstantial evidence that the typhoid outbreak was due to contaminated drinking water supplies. Only 3 of the 31 cases had been inoculated with T.A.B. vaccine within a year of going to Zermatt: one was a girl of 26 who was severely ill; the other two, a girl of 26 and a man of 41, had mild illnesses. Nine patients had no record of any previous T.A.B. inoculation.

There was one death in a man of 25 years who had been in Zermatt from 17th-24th February. He became ill on 3rd March and died on 27th March. He had never been inoculated. In 65 other cases information was obtained about the severity of illness. Twenty were described as being seriously ill, of whom 10 had never been inoculated with T. A. B. vaccine, 9 had been incoulated at some time in the past and one was uncertain whether or not he had ever been inoculated. Thirty-two were said to be moderately ill; of these 17 had never been inoculated, 10 had been inoculated some time in the past and in 5 cases there was doubt about previous inoculations. Thirteen cases were regarded as mild, of whom 9 had previously been inoculated, and 4 had never been inoculated.

It is perhaps significant that only 3 of the 68 cases had been inoculated with T.A.B. vaccine within the previous 12 months and attention might once again be drawn to the pamphlet entitled "Notice to Travellers" in which it is recommended that all persons intending to travel abroad should be adequately vaccinated against typhoid and paratyphoid fevers.

2. *The Harlow Outbreak*

On 31st May a 4 year old boy who was being investigated in St. Margaret's Hospital, Epping, because of a pyrexial illness which had commenced on 15th May, was found to have serological evidence of typhoid fever. On going into the family history it was discovered that his mother had been ill since 17th May and that his father had been admitted shortly afterwards to a mental hospital. Serological tests indicated that both parents were suffering from typhoid fever. General practitioners and hospitals in the area were alerted and it soon became evident that other persons were suffering from ill-defined pyrexial illnesses. The picture was somewhat confused by the fact that there was concurrently an outbreak of Sonne dysentery in the town but serological and bacteriological tests soon established that there were a number of genuine cases of typhoid fever with onset of symptoms ranging, in the majority of instances, between 15th and 26th May. The strain of *S. typhi* isolated proved in every case to belong to Vi-phage type A.

Water and milk supplies were soon excluded as likely vehicles of infection because of the limited distribution of the cases. With one exception, all the patients lived within a short distance of a shopping area in the town called The

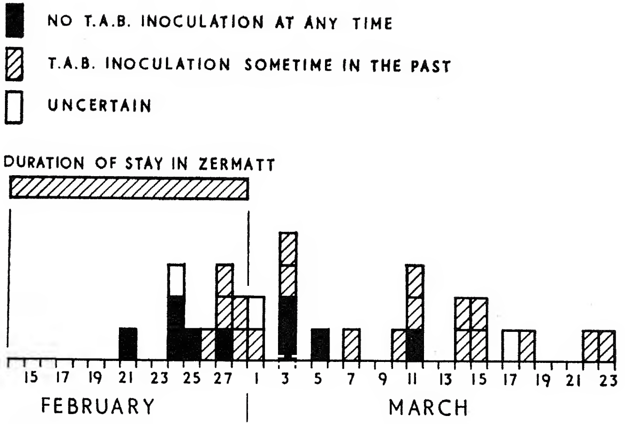

FIG. 2. DATES OF ONSET OF ILLNESS IN 31 CASES IN A PARTY OF 95 HOLIDAYMAKERS WHO STAYED IN ZERMATT DURING THE LAST TWO WEEKS IN FEBRUARY.

Stow. Detailed enquiries from patients and their relatives established that almost all infected persons had consumed cold meats purchased from one butcher shop in The Stow. Blood from all workers in the shop was examined for Vi antibodies and repeated specimens of urine and faeces were cultured. Tests on all the staff were found to be negative apart from an apprentice aged 17 who was actually suffering from typhoid fever. He had not been away from Harlow and had no other recent history of ill-health. He became ill on 18th May which suggested that he was a victim rather than the source of infection. It now seemed likely that infection had been introduced into the shop by some foodstuff, probably contaminated meat. The apprentice admitted that he frequently lunched on sliced corned beef in the shop. Patients were further questioned in an attempt to pin-point the particular food involved and most of them could remember having eaten corned beef purchased from this one particular shop. Additional evidence came to light implicating corned beef: in one family the mother and daughter ate corned beef purchased from the suspected shop but the father and son did not as they had never liked corned beef. The mother and daughter developed typhoid fever but the other members of the family were unaffected. Further, a milk roundsman who became ill with typhoid fever about 17th May often ate sandwiches prepared from corned beef purchased from the shop. During the week ended 11th May he was assisted on his rounds by a boy who lived in a different part of the town with whom he shared his corned beef sandwiches. The boy also fell ill with typhoid on 22nd May. The final piece of evidence implicating corned beef related to a couple living in Thornton Heath, Surrey, who stayed with friends in Harlow on 11th-12th May. They all lunched on corned beef which had been purchased from the suspected shop of 10th May: three developed typhoid fever with onset of symptoms ranging from 18th-23rd May.

Analysis of available facts suggested that contaminated meat had been on sale in the shop between 7th-11th May. Corned beef was purchased in 6 lb cans and then sliced before sale; each can lasted three to four days. It was thus possible that one infected can could have caused the entire outbreak. The suspected can of corned beef had, of course, long since been disposed of and was unavailable for examination. However, several cans of the same production batch were examined bacteriologically, but *S. typhi* was not recovered from any of them.

Twenty-six persons were involved in this outbreak of whom 23 were regarded as clinical cases and 3 as symptomless excreters. Although some patients were acutely ill there were no deaths and so far as is known no persistent excreters.

TABLE II.21

Age and sex distribution in 23 cases and 3 excreters in the Harlow outbreak

Sex	Age in Years					Total
	0–4	5–14	15–24	25–40	Over 40	
M.	3	1	2	4	2	12
F.	1	4	3	5	1	14
Total	4	5	5	9	3	26

Table II.21 sets out age and sex distribution of persons involved. The brunt of the attack fell on adolescents and young adults, females predominating in this group. Among the 5–14 year olds the ratio of females to males was 4–1.

Figure 3 relates the dates of onset of illness to the period during which infected meat was presumed to have been on sale in the shop. In many cases the incubation period could be determined with considerable accuracy and in some instances it was as short as 6 days.

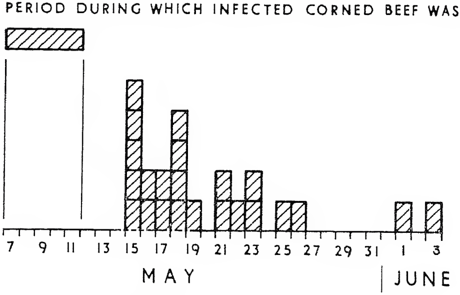

FIG. 3. DATES OF ONSET OF ILLNESS IN 23 CASES OF TYPHOID FEVER IN THE HARLOW OUTBREAK

There were 3 late infections, two of which were in the wife and daughter of the milk roundsman. His wife was found to be infected on 14th June and his daughter a few days later, the milk roundsman most probably being the source of infection in both instances. The third patient was a girl, aged 6 years, who became ill on 4th June. Two other members of the family had developed typhoid fever previously, one with onset of symptoms on 23rd May and the other on 26th May. It is likely that the child was secondarily infected from one of these siblings.

3. *South Shields Outbreak*

This outbreak came to light on 18th June when a 14 year old boy who had been admitted to hospital on 17th June for investigation of a pyrexial illness with loose stools and abdominal discomfort which commenced on 5th June was found to have a positive Widal test and *S. typhi* was isolated from the faeces. The second case, a girl of 14 who fell ill on 7th June, was reported on 19th June when typhoid bacilli were isolated from blood culture. The girl's mother, who worked in a factory canteen, was found to be excreting *S. typhi* in her faeces and urine. General practitioners and hospital authorities in the area were alerted and in due course it was learned that several other individuals were suffering from typhoid fever. Further investigations revealed that most of those involved shopped at one particular store in the town and that the majority could remember having consumed either sliced corned beef or cold ham purchased from the store. There were two cases of typhoid fever among workers in the store, one an 18 year old girl who fell ill on 15th June and the other a 16 year old girl who fell ill on 17th June. Dates of onset of illness made it unlikely that either of these girls was the source of infection. Screening of other workers in the store brought to light two faecal excreters, but as they both subsequently developed symptoms it was again improbable that they were the source of infection.

A reasonably firm date of onset of illness was established in 19 cases of which three were unconfirmed bacteriologically. The majority of them fell ill between 5th and 21st June. There were in addition five other confirmed cases with doubtful dates of onset, and three symptomless excreters.

In every instance where it was isolated, the strain of *S. typhi* proved to belong to a degraded Vi strain. Although several patients were seriously ill there were no deaths.

4. The Bedford Outbreak

Attention was drawn to this outbreak on 19th October when a patient under investigation in Bedford General Hospital for an illness which commenced on 5th October, was found to have a positive Widal test. Screening of home contacts revealed that his father had been ill two weeks previously but was then well, and that another relative had become ill on 14th October with what subsequently proved to be typhoid fever. Serological and bacteriological investigations did not establish, however, that the father had been infected. General practitioners and hospitals in the area were alerted and it soon became evident that there were other cases of typhoid fever in Bedford itself and in surrounding districts.

Enquiries were made as to places where the patients had shopped and food and drink consumed during the presumed period of infection. It emerged that most of the patients had eaten food bought at one large general store during the relevant period. There were over 80 employees and samples of blood and faeces were examined from each one. One woman employee was found to be a confirmed case, having became ill on 10th October. The date of onset of illness suggested that she was a victim rather than a source of infection. The question of casual employees in the shop was looked into as well as the possibility that a visiting supervisor might have contaminated food products by handling them. As a result of enquiries these possibilities were ruled out.

Having excluded the likelihood of an excreter within the premises it was felt that some food already contaminated before entering the shop might be the more probable source of the outbreak. Further questioning of the persons involved revealed that the one food which the great majority could remember having purchased from the store and having consumed during the relevant period was sliced corned beef. One of the involved families, comprising father, mother and son, lived in Sharnbrook a few miles outside Bedford. The father and mother both ate sandwiches on 5th October, prepared from sliced corned beef purchased that day. Both developed typhoid fever; the mother fell ill on 12th October and the father developed symptoms between 12th and 14th October. The son, who had not eaten the sandwiches, was not affected at that time but became ill on 26th October with what subsequently proved to be typhoid fever. It was thought that he had been secondarily infected from his mother. On 5th October a man in Kempston also ate sandwiches prepared from sliced corned beef purchased from the store that day. He fell ill on 13th October. A friend who shared his sandwiches on 5th October fell ill on 14th October. Both patients subsequently proved to have typhoid fever. Another incident involved a man who fell ill on 14th October and was later shown by positive stool culture and serological tests to be suffering from typhoid fever. His wife could remember having purchased corned beef from one of two stores (one being the store where the suspected beef had been on sale) on 29th September and on 5th October. The corned beef purchased on 29th September was shared by two friends who did not develop symptoms and whose serology and stool cultures were negative. Another friend shared the corned beef purchased on 5th October and he subsequently developed an influenza-like illness. Culture of his stools was negative, but serological tests suggested recent typhoid infection.

The evidence implicating corned beef appeared to be strong and it was thought that one infected can could have been responsible for the entire outbreak. It seemed likely from the evidence available that meat from this can was sliced and sold on Saturday, 5th October. The index case, who fell ill on 5th October, did not appear to fit into this pattern. There was, however, a mild gastro-intestinal illness of non-bacterial origin prevalent in Bedford and surrounding districts at that time, and it was conjectured that the initial symptoms might have been due to this illness and that the onset of typhoid fever proper could be dated somewhat later.

It will be noted (Figure 4) that in 15 of the 16 primary cases dates of onset of illness ranged from 10th to 14th October. Assuming that contaminated meat was sold on 5th October this would imply a very short incubation period, ranging from 5 to 9 days.

It will be seen in Table II.22 that in this outbreak males outnumbered females particularly in the 25–40 age group where the ratio of males to females was 4–1. There were 16 primary cases, 5 secondary cases, in some of whom links with primary cases were tenuous, and two symptomless excreters. Typhoid organisms were isolated from 16 patients and in each case proved to be of Vi phage type E1, but the strain had features enabling it to be distinguished from that responsible for the Zermatt outbreak.

There were no deaths in this outbreak.

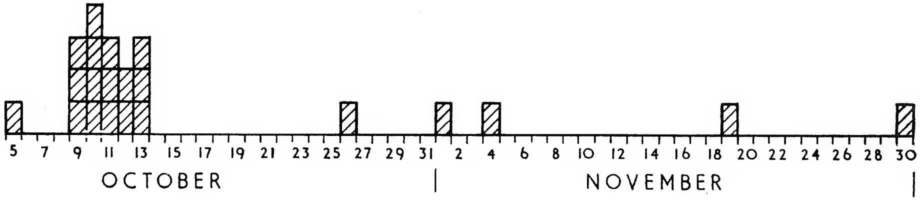

FIG. 4. DATES OF ONSET OF ILLNESS IN 21 CASES IN THE BEDFORD OUTBREAK

TABLE II.22

Age and sex distribution in 23 infected persons in the Bedford outbreak

Sex	Age in Years					Total
	0–4	5–15	15–24	25–40	Over 40	
M.	1	3	1	8	2	15
F.	..	1	2	2	3	8
Total	1	4	3	10	5	23

In the 3 indigenous outbreaks it will be noted that the incubation period in some instances was as short as 5 days: this would imply a heavy concentration of infecting organisms such as might be found in a contaminated food product in which the bacteria could multiply. The three outbreaks at Harlow, South Shields and Bedford emphasise the need for detailed and accurate information on the food and drink consumed by patients during the presumed period of infection. In each outbreak there were two common factors—the consumption of cold meats, including corned beef, and the fact that in each outbreak one particular store in the town was the retail source of the food. Suspicion naturally fell on corned beef in the larger 6 lb packs which are sliced in the shop and sold by weight as required. In the Harlow incident the can lasted three or more days and could thus have been exposed to contamination from an unknown carrier in the shop, or from some other source. Contamination within the can itself during manufacture seemed at first to be a less likely cause of the outbreak.

In each outbreak the possibility of infection from a carrier was eliminated. The possibility of an infected can was therfore accepted in the Harlow outbreak. Other cans of the same brand and the same production batches were examined but no pathogens were found.

In the South Shields outbreak the picture was somewhat confused as other cold meats, apart from corned beef, were involved and the organism was of a different phage type to that at Harlow. However, the brand of corned beef, a widely distributed one, was the same and examination of other cans of comparable production dates gave no evidence of faulty production, or bacterial contamination.

All imported meat is subject to the Public Health (Imported Food) Regulations, 1937. The Ministry of Agriculture, Fisheries and Food authorise the issue of official certificates for meat and meat products after they have inspected the production and slaughtering procedures of the exporting country. At the time of the Harlow outbreak enquiries in collaboration with the Ministry of Agriculture, Fisheries and Food were made in the country of origin of this particular brand of corned beef. The information obtained was interesting. The factory producing this brand used untreated river water for cooling the cans in the autoclave. Further information revealed that there had been an outbreak of typhoid fever from 1st May to 10th June, 1962, at a place several miles upstream of this factory. While this might fit in with infection by one phage type it would not, by itself, fit in with outbreaks due to different phage types. The third outbreak at Bedford provided an almost identical story and the evidence that this particular brand and pack of corned beef was the vehicle of infection was very strong indeed. It now became reasonable to assume that the river water was polluted and that its use, untreated, for cooling the cans caused the chance infection of an occasional can.

The firm manufacturing the suspected cans of meat were consulted and fully informed of all the evidence available. As a result they withdrew from circulation all cans of corned beef of this size which had been produced by this factory on or after 30th May, 1962. This was an involved and difficult operation for the firm to carry out apart from the heavy expense involved, and the efficient manner in which they completed their task is an example of the co-operation that exists between the trade and public health authorities. A chlorination plant has now been installed at the factory concerned and no further production from the factory will be imported until this is working satisfactorily.

Canned foods are among the safest of foods, but canned meats, particularly in the larger commercial size cans from which products such as corned beef and other cold processed meats are sold sliced, are not infrequently reported as the vehicle of food poisoning incidents during the summer months. Such meats are particularly liable to contamination from knives and machinery which may have been used for other foods in the shops, or from an employee who may unknowingly be a carrier. A typhoid outbreak at Crowthorne in 1949 was due to a source of this nature, where 42 cases from 15 households had consumed corned beef purchased from one butcher's shop (Ministry of Health, 1951). Those in the households affected who did not eat corned beef did not contract the disease. The corned beef came from several cans (size not stated) and had been sold sliced.

Outbreaks attributable to faults in canning are, by contrast, very infrequent. A comparable incident was mentioned in the Report for 1957 (Ministry of Health, 1958). A series of staphylococcal food poisoning incidents followed the consumption of processed peas sold in large catering sized cans. The infection was traced to an employee who handled the cans immediately after they left the cooling water. The seams of the can may not be properly re-sealed at this stage, and this, coupled with a batch of cans which had undetectable structural defects, led to the infection of an occasional can.

It is recognised that it is advisable that water used for cooling the cans in the autoclave should be hyperchlorinated (usually about 5 p.p.m.) or from a safe source to prevent possible contamination at this stage, and it was surprising therefore to learn that the factory producing the suspect corned beef consumed in the Harlow, South Shields, and Bedford outbreaks, was not doing so. The canned products are all given a code number from which the date of production and other details can be ascertained. After a short period of storage at incubation temperatures in which any "blown" or leaking cans are removed the sound cans are packed into cartons for wholesale distribution. Not all bacterial contaminants will produce gas which would be indicated by a "blown" can, and in the staphylococcal incident described contamination in processed peas did not cause the tins to be "blown", whereas in fresh garden canned peas the same contamination did so.

The knowledge that contamination from cooling water is possible if the recognised canning techniques are not followed coupled with the prevalence of typhoid in the vicinity seemed to confirm the epidemiological evidence in these incidents. The lessons to be learnt emphasise the need for the careful handling of canned meats which are sold sliced in retail shops, and in these three incidents the record was good, for spread to other foods occurred little if at all. Damaged cans need careful examination before and after opening and good hygiene principles in handling and storing the product must be observed. If there are signs of discolouration or possible decomposition the affected portion of the meat should not be trimmed off. If there is any doubt about the can or its contents it should either be destroyed or the advice of the local health authority be obtained before it is offered for sale. But the main deduction from this experience is that typhoid organisms may contaminate the contents of a can without producing any sign detectable at the time of use. Such an event is extremely rare and canned meat remains one of the safest foods. Yet subsequent experience was to show that a risk probably exists not merely in the presence of an outbreak near the factory but from the use of cooling water liable to sewage pollution. This, like much else in epidemiology, is a conclusion reached by inference, but it seems the only reasonable appraisal of the facts now available and might lead to different conclusions about the source of infection in some incidents in the past.

TABLE II.23

Corrected notifications of typhoid and paratyphoid fevers during the past ten years

Year	Corrected Notifications*	
	Typhoid Fever	Paratyphoid Fever
1954	122	548
1955	193	876
1956	136	440
1957	125	310
1958	47†	200
1959	123	379
1960	90	241
1961	97	254
1962	130	126
1963	247	342

* Including original notifications from Port Health Districts.
† Revised figure.

Apart from the four major outbreaks 108 other cases of typhoid fever were notified in England and Wales during 1963 and of these 48 (44 per cent) were thought to have contracted the disease abroad. Several family incidents and localised institutional outbreaks could be traced to known carriers.

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Paratyphoid Fever

Four outbreaks of paratyphoid fever occurred in the second quarter of the year, all associated with the use of Chinese frozen egg in bakeries. The story of these outbreaks is linked with an outbreak in Edinburgh in the second half of

December, 1962, in which 40 cases (30 of them children) had been recorded by 1st January, 1963. The food vehicles were a trifle and cream cakes, and *S. paratyphi B* phage type Taunton was common to all cases.

Chinese frozen whole egg was suspected and the batches in use were known to have been imported early in December on one of three ships—"A", "B" and "C". After import the cargoes were all sampled bacteriologically and batches not found to be contaminated with salmonellae were released. Tins of the same batch number as were found at the bakery, as well as other batches which were still in the cold store, were re-sampled in January. *S. paratyphi B* phage Taunton and *S. paratyphi B* phage type 2 were isolated from one tin of one of these other batches. The batches known to have been used in the bakery were not shown to be contaminated. Following this second sampling, of a cargo of just over 400 tons in ship "C", more than half was now detained, and it is known that by the end of January no further tins of Chinese egg from the ship "C" shipment were moved from the cold store.

CAMBRIDGESHIRE AND HUNTINGDONSHIRE

The first case of paratyphoid fever was reported on 27th March, and by the end of April, 47 cases had been notified, more than half of whom were under the age of sixteen. The common aliment was cream cakes and the like, and all purchases had been made from retail shops in the two counties associated with a central bakery. In all the cases the strain isolated belonged to phage type Taunton. Bacteriological sampling of 30 tins of Chinese whole frozen egg taken from the bakery did not show any of the tins to be contaminated with the paratyphoid B bacillus, but *S. thompson* was isolated from ten of them. The Chinese egg used at this bakery came from shipments off ship "B" and ship "A".

SUTTON, CHEAM AND CARSHALTON

Two young children became ill during the last week in February and *S. paratyphi B* phage type Taunton infection was confirmed. In the second half of March and first week in April a further twelve cases occurred, and six excreters were found; eleven of these were in three families. Fourteen of a total of twenty cases and excreters were under the age of sixteen. Cream pastries and eclairs were common footstuffs which had been purchase from either one or two retail shops which obtained supplies from the same bakery. Chinese whole egg was again suspect, but the bacteriological sampling of opened and unopened tins of the same batch numbers as had been used at the bakery did not reveal contamination with *S. paratyphi B.*

YORKSHIRE

Early in April a more serious outbreak occurred which affected more than twenty local authorities in Yorkshire. Most of the cases were in the West and North Ridings of Yorkshire, but there were also a few cases in the East Riding. The first case, a boy aged fourteen, fell ill during the first week in April. *S. paratyphi B* phage type Taunton was isolated on 17th April, and notification received on 19th April. Over the following week-end notifications increased to twelve and the widespread nature of the outbreak was realised. Again, only one bakery was involved and in all incidents purchases had been made from retail or travelling shops associated with this bakery which until the second week in April had used Chinese frozen whole egg supplied by the early December shipment of ship "B". By the time notifications were received no stocks of Chinese frozen whole eggs were held by the bakery.

LEWISHAM

Eleven cases of *paratyphoid* due to phage type Taunton occurred in Lewisham. The first case was notified on 10th April, the onset of the illness being a week earlier. In addition to the cases in Lewisham, a further case—the son of the owner of the bakery—was diagnosed at his home in Berkshire. All the cases were associated with one bakery which had used Chinese frozen whole egg until the beginning of April. No tins of the egg were found in the bakery, but the supplier stated that stock sent to the bakery came from the early December shipment of ship "B".

In these four outbreaks in England, in addition to the primary cases and excreters, secondary cases occurred and more excreters were found. Figures from the Enteric Reference Laboratory at Colindale gave the following total of cases and excreters associated with these outbreaks.

TABLE II.24

	Cases	Excreters	Total
Sutton, Cheam and Carshalton..	27	4	31
Cambridgeshire and Huntingdon	75	9	84
Yorkshire	40	7	47
Lewisham	11	1	12
Total	153	21	174

In each of the incidents suspicion fell on Chinese whole frozen eggs imported early in December by three ships. The story in each was remarkably similar; a bakery with two or more retail premises, and each primary case had a history of purchases of cream buns, eclairs, or cream cakes from the one source. Repeated sampling of production batches of the Chinese frozen whole egg known to be used at the bakery, or found at the bakery, failed to produce *S. paratyphi B* from that stock, although it was isolated from other batches.

The Edinburgh outbreak had led to the first re-sampling of the consignment from one ship—"C"—and the last date on which any tins of this consignment left the London cold store was 28th January. The Cambridge outbreak involved cargo from the other two ships, and following quickly after this came the Sutton, Cheam and Carshalton incidents, which again cast suspicion on ship "C" consignment. The importers agreed to hold all stocks of the remaining consignments from these ships in the London cold store. This consisted of 223 out of 402 tons from ship "C", 122 out of the 196 tons from ship "A", and 31 out of 345 tons from ship "B". They also agreed to recall stocks which had been distributed. All Medical Officers of Health were advised of the situation by letter on 2nd May. In the meantime importers had agreed not to release any stocks of Chinese whole frozen egg before it had been pasteurised. There is, of course, no reflection on the ships.

In spite of increased notifications there were only 4 typhoid deaths and 1 paratyphoid death during 1963.

Whooping Cough

TABLE II.25

Corrected notifications, deaths and fatality ratios 1954–1963

Year	Corrected notifications		Deaths					Fatality Ratio*
	All ages	Under 1 year	All Ages	Under 1 year	Under 3 months	3–5 months	6–11 months	
1954	105,904	9,438	139	95	40	29	26	0·13
1955	79,101	1,093	87	60	20	23	17	0·11
1956	92,407	8,466	92	63	21	21	21	0·10
1957	85,017	7,604	87	68	22	23	23	0·10
1958	33,400	3,306	27	18	8	7	3	0·08
1959	33,252	3,319	25	16	6	5	5	0·08
1960	58,030	5,869	37	26	13	8	5	0·06
1961	24,469	2,436	27	19	8	8	3	0·11
1962	8,347	1,026	24	18	4	8	6	0·29
1963	34,736	4,117	36	29	11	10	8	0·10

* Deaths per 100 notifications. Deaths from 1954 to 1957 included those occurring more than one year after the onset of whooping cough. Since 1958 these have been excluded.

The number of corrected notifications of whooping cough in 1963 showed a sharp rise over that for 1962. There were 34,736 cases notified in 1963 as compared with 8,347 in 1962. The increase was due to an outbreak which had its peak during the fourth quarter of the year and which was particularly severe in Lancashire.

Food Poisoning

TABLE II.26

Food poisoning incidence: England and Wales 1963

	Outbreaks		Family Outbreaks		Sporadic Cases	Total	
	Incidents	Cases	Incidents	Cases	Cases	Incidents	Cases
S. typhimurium ..	20 (18)	261 (227)	219 (205)	576 (544)	1,007 (1,220)	1,246 (1,443)	1,844 (1,991)
Other Salmonellae	12 (25)	137 (433)	76 (72)	219 (194)	494 (459)	582 (556)	850 (1,086)
Cl. welchii	64 (32)	3,292 (1,163)	11 (5)	34 (14)	11 (35)	86 (72)	3,337 (1,212)
Staph. aureus ..	14 (14)	224 (455)	14 (13)	40 (31)	53 (104)	81 (131)	317 (590)
Other causes ..	3 (1)	32 (15)	3 (1)	14 (2)	4 (10)	10 (12)	50 (27)
Cause unknown	29 (35)	1,625 (615)	167 (200)	511 (569)	1,161 (1,125)	1,357 (1,360)	3,297 (2,309)
Total	142 (125)	5,571 (2,908)	490 (496)	1,394 (1,354)	2,730 (2,953)	3,362 (3,574)	9,695 (7,215)

(Figures for 1962 in brackets.)

Incidence

Table II.26 has been compiled from the annual returns of food poisoning submitted by medical officers of health in accordance with Memo. 188. The figures show a decrease in the number of incidents compared with 1962 but this is almost solely due to the decrease in sporadic cases although the number of persons reported to be involved in the incidents has increased. The reduction in the number of incidents follows the trend recorded since 1960, but is in no way reassuring in view of the increase in larger outbreaks.

The most disturbing feature of the figures is the increase in the number of general outbreaks due to *Cl. welchii* food poisoning. These are responsible for nearly half the total number of general outbreaks, and for more than two-thirds of the cases involved in all the general outbreaks. The places where such outbreaks occurred, with the number of cases involved, are shown in the following Table II.27.

TABLE II.27

Food poisoning: general outbreaks of Cl. welchii *food poisoning*

Place	No. outbreaks	Cases
Schools ..	20	1,552
Hospitals ..	11	725
Canteens ..	8	198
Other	25	817
	64	3,292

It is particularly disturbing that nearly half of these outbreaks, and two-thirds of the cases involved were in hospitals and schools. In almost all these outbreaks the pre-cooking of meat is involved, whether it is eaten cold, or reheated the next day prior to consumption. Nearly all reports indicate two faults in the preparation of the meat dishes involved—either lack of quick cooling after the initial cooking, and/or failure to cook the meat thoroughly at the second cooking. These are points which have been emphasised over and over again. Where pre-cooking is necessary there must be sufficient cold room space for the rapid cooling of meat dishes. The gravy should be drained off and the meat stored in a refrigerator. If the dishes are to be eaten hot, the reheating must be thorough.

Table II.28 gives the numbers of cases and outbreaks of salmonellosis which could not be attributed to any known food vehicle. They show little change from last year's figures.

TABLE II.28

Cases and outbreaks of salmonellosis which could not be attributed to a known food vehicle

	OUTBREAKS		FAMILY OUTBREAKS		SPORADIC CASES	TOTAL	
	Incidents	Cases	Incidents	Cases		Incidents	Cases
S. typhimurium . .	3 (4)	27 (12)	29 (39)	83 (113)	129 (148)	161 (191)	239 (273)
Other Salmonellae	4 (2)	15 (20)	19 (14)	54 (39)	73 (67)	96 (83)	142 (126)
Total	7 (6)	42 (32)	48 (53)	137 (152)	202 (215)	257 (274)	381 (399)

(Figures for 1962 in brackets.)

Fatal Cases

There were fifteen fatal cases associated with food poisoning in 1963 which is a reduction on last year's figure. Three of these occurred in one outbreak of *Cl. welchii* food poisoning in a geriatric unit of a hospital. Out of 202 at risk, there were 41 cases, three of which were fatal, following a meal which included boiled ham (Parry, 1963). Two babies died from a meningitis due to salmonellae. In a male baby of five weeks the serotype was *S. brandenburg*, and other members of the family were found to be symptomless excreters. A female baby of two months, ill with bronchiolitis, developed diarrhoea and vomiting the day after discharge from hospital. She was readmitted but later died. The serotype was *S. muenchen*, and she also had an *E. coli 111* infection. A female aged 24 who died was involved in a family outbreak of food poisoning due to *S. typhimurium* from contaminated pork pies. A man aged 60 also involved in a family outbreak died. The serotype was *S. heidelberg* and the food vehicle sausages. *S. typhimurium* was the organism found post mortem in the following seven other cases: a male aged 44, who was admitted to hospital from a common lodging house with frostbite and ulceration of his lower extremities; a female child aged 16 months who had been ill with diarrhoea and vomiting for a fortnight; a woman aged 45, in hospital with chronic pyelonephritis; and four men aged 60, 71, 73, and 87. *S. typhimurium*, which could have been due to food poisoning, was considered to be a contributory cause of death, but other myocardial lesions, or chronic ill-health, were present. One baby aged two months died from gastro-enteritis, due to an infection with an unidentified salmonella.

Selected outbreaks

There were three outbreaks following the consumption of unpasteurised T.T. milk. In one, the milk was offered for sale from vending machines in the New Forest area and enteritis due to *S. heidelberg* resulted in 28 people, of whom 23 were under the age of 14 (Hutchinson, 1964). At the time of the outbreak the herd had an epizootic enteritis due to the same salmonella, and two of the cows in the herd were also found to be infected with *S. montevideo*. Two persons consuming milk from the vending machines were ill with an infection of this latter salmonella. Four out of eight people working or living on the farm were excreters of *S. heidelberg*, and this organism was also isolated from the cattle

feed being used at the time. Of 74 cows in the herd *S. heidelberg* was isolated from 21, and even after treatment eleven were still found to be excreters of the organism.

In the other two milk outbreaks the causal organism was *S. typhimurium*, and the cases in each incident were limited to the farmer's family, employees on the farm, and a very limited milk round. In one outbreak there were 23 cases and excreters, and *S. typhimurium*, phage type 12a, was isolated from the patients, the milk, cows in the herd, and the cattle feed. In the other outbreak there were 16 cases and excreters.

Two outbreaks were associated with bakeries in which cream cakes were the food vehicle. In one, *S. typhimurium*, phage type U.138, was isolated from machinery, dish cloths, and cream fillers in the bakery. 34 per cent of the bakery employees were excreters. The premises were small and an increased production beyond their capacity was considered an important contributory cause of the outbreak which involved over 150 cases and excreters.

In the other outbreak the products of a bakery which supplied many retail shops, cafés, and public houses, were contaminated with *S. typhimurium*, phage type 1a. In both these outbreaks the egg products used were examined and found free from contamination but the standards of hygiene were unsatisfactory and a human carrier was considered the probable source of both outbreaks.

Pork meat and processed pork meat products contaminated with *S. brandenberg* caused one general and several family outbreaks in districts around Leicester. The causal organism was isolated from pig carcases at the abattoir, from the lairages, equipment at the meat factory adjacent to the abattoir, food handlers in this factory and from the meat products of the factory. *S. brandenberg* is most commonly found in pigs, pork, and pork meat products such as sausages. It is not a very frequent cause of food poisoning and an outbreak of this nature suggests a gradual build up of contamination in the lairages and at the abattoir. The events recall the work of McDonagh and Smith (1963) at Bradford who considered the abattoir as the most important source of salmonella infection, and that pigs were the main animal reservoir.

A chemical poisoning outbreak affecting 23 children occurred at a junior school Christmas party where a popular aerated drink caused headache, nausea, and abdominal pain. On analysis the drink was found to contain 10 p.p.m. of arsenic. The symptoms came on from half-an-hour up to twelve hours after consumption, but recovery was complete within 3–36 hours. Many of the children did not finish their drink because it had a "sharp" taste. The source of the contamination was not traced.

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III

INTERNATIONAL HEALTH

Education and Training of Overseas Students

The sharing of medical knowledge and complete freedom in the dissemination of this knowledge has long been a feature of medical practice, and the exchange of students and members of the health professions between centres of learning for primary or postgraduate professional education is part of that tradition.

To this end, the United Kingdom has always demonstrated its willingness to play its part in the education and training of doctors, nurses and medical auxiliaries. The Department of Technical Co-operation is responsible for providing and co-ordinating British technical assistance in the field of health, but it looks to the Universities and to the National Health Service for facilities for the training.

One important contribution is the teaching of medical undergraduates and postgraduates, and in addition to the 900 medical students from overseas occupying places in our medical schools, out of the 9,650 junior medical posts in our hospitals, 4,025 are held by graduates from outside the United Kingdom. These doctors fulfil an important function in our service, but they also gain knowledge and experience here which might less readily be available to them in the hospital services of their own countries. Some are specially selected and placed for advanced training with the object of becoming teachers and leaders in their professions on returning to their own countries. Several University medical schools, hospitals and hospital boards have created supernumerary training appointments for overseas graduates. Senior members of the profession in this country do much valuable work visiting overseas Universities to act as external examiners or as special advisers. There are also some arrangements for secondment of registrars or senior registrars mainly to centres in Africa and with the help of the Nuffield Foundation a few exchanges of students.

The World Health Organisation provides technical and professional assistance to countries in need. The most up-to-date advice is obtained from a system of panels and committees drawn from international experts (*see* Appendix G). The United Kingdom alone provides over 270 members for these panels, one of the terms of whose membership is that they can be called upon at any time to give advice in their speciality to the World Health Organisation. Experience from international aid programmes has re-emphasised, however, the fact that assistance to countries can only be of lasting value when it forms part of complementary assistance in a planned programme of strengthening the state of the public health in the country concerned, of maintaining progress achieved and consolidating gains when this assistance is terminated. To do this, staff must be trained for the various services involved.

Part of the annual budget of the World Health Organisation is allotted to the health administrations of the individual countries for the purpose of appointing Fellows to undertake courses of training in other countries. In 1963, W.H.O.

awarded just over 1,000 individual Fellowships for study in Europe and of these, 364 (over one third) came to study in the United Kingdom. In addition to these medical and allied Fellowships sponsored by the World Health Organisation, over 100 other Fellowships on similar lines were awarded under the scheme for international exchange arranged by the Council of Europe and the Central European Treaty Organisation. Fellowships are also provided by the Department of Technical Co-operation under the Colombo Plan, Special Commonwealth African Assistance Plan and other regional programmes. The number of such Fellows at any one time in Britain is approximately 450.

The subjects studied were many and varied, ranging from genetics to radioactive isotopes and from health education to port health administration. 30 per cent of the Fellows studied public health administration, sanitary engineering or hygiene. A further 30 per cent studied the basic medical sciences and medical and allied education. An increasing number, over 10 per cent, were in the nursing field.

In addition to the Fellows who studied nursing, education and administration, however, a considerable number of overseas girls, particularly from the Commonwealth countries, are undertaking nurse training in hospitals in the United Kingdom. An outstanding example of this is the scheme by which 200 girls from Malaysia are now receiving nurse training in this country.

The geographical contribution to the Fellowship programme shows an increasing number of Fellowships from Asia and the developing African countries. Last year just over 50 per cent came from Europe, but the numbers for Asia rose to over 21 per cent and those for the Africas to 17 per cent—the remainder came from Australasia and the Americas.

The distribution of fellowships by region and subject of study for 1962–63 is as follows:—

Subject of study	Europe		Asia		Americas		Australasia		Africa		TOTAL	
	1962	1963	1962	1963	1962	1963	1962	1963	1962	1963	1962	1963
Public Health..	35	24	22	15	8	1	1	..	19	11	85	51
Sanitary Science, Hygiene, Control of Food & Drugs	25	17	12	18	1	1	..	..	5	6	43	42
Nursing Training & Administration	21	19	10	4	2	..	1	..	3	22	37	45
Maternal & Child Health	12	6	3	3	1	3	..	..	..	2	16	14
Basic Medical Sciences, Medical & Allied Education	55	70	14	18	3	4	3	3	2	10	77	105
Mental Health	20	14	4	1	3	4	..	..	5	1	32	20
Dental Health	2	2	..	2	1	..	..	..	..	..	3	4
Hospital Administration Statistics	11	20	5	4	6	3	4	..	2	1	28	28
Clinical Medicine and Surgery	17	19	6	5	1	2	1	1	2	2	27	29
Other Health Sciences ..	10	14	3	6	1	2	..	..	..	4	14	26
TOTAL	208	205	79	76	27	20	10	4	38	59	362	364

Sea Ports

The sections on port and airport administration, international deratting and deratting exemption certificates and medical examination of aliens and Commonwealth immigrants appear this year in the Ministry's Report.

IV

VENEREAL DISEASES

The infectious venereal diseases have increased steadily in recent years, although there have been some minor fluctuations in the prevalence of particular infections. The rise in cases of gonorrhoea has been evident since 1954, that of infectious syphilis since 1958 and of non-gonococcal urethritis in men since at least 1951. At present there is no evidence of reversal of this general trend, despite the slight check in the figures for gonorrhoea in 1962.

Syphilis

In the Report for 1962 it was noted that the rise in incidence of infectious syphilis, that is syphilis in the primary, secondary and early latent stages, had given cause for some anxiety because the increase, though small, was consistent and because considerable increases had been reported from some other countries. The tendency to movements of population and the ease and rapidity of modern travel were factors that made spread of such infection between countries more likely. The figures for 1963 indicate that these anxieties were well founded. In 1962 it was reported from the clinics there were 995 cases of infectious syphilis in males and 229 in females, giving a total of 1,224. In 1963 the corresponding numbers were 1,135 in males and 255 in females, giving a total of 1,390, an increase of 13·5 per cent. Estimates as to the duration of infection in cases of latent syphilis are subject to error because decisions whether cases are "early" or "late" are based upon histories—symptoms and signs being by definition absent in these cases. Histories are subject to error and many patients are quite unable to help in estimating the probable time of infection. It is, in any case, impossible to know whether syphilis in a latent stage is infectious. For these reasons a more accurate though possibly less complete estimate of infectious syphilis would include syphilis in its primary and secondary stages only. By this definition, the number of cases of infectious syphilis in males was 951 and that in females 176 giving a total of 1,127 as compared with 933 in 1962, an increase of 21 per cent.

The numbers of cases of early syphilis, that is primary, secondary and early latent syphilis, reported for 10 urban areas in 1962 and 1963 are shown in Table IV.I.

TABLE IV.1. Early syphilitic infections dealt with for the first time in 1962 and 1963 in ten sample areas

AREA	1962			1963		
	Males	Females	Total	Males	Females	Total
London Administrative Area (3,178,870)	555	93	648	576	91	667
Merseyside (Liverpool, Bootle, Birkenhead, and Wallasey) .. .. (1,070,120)	67	12	79	73	13	86
Manchester and Salford .. .. .. (807,240)	16	5	21	23	9	32
Tyneside (Newcastle, South Shields and Tynemouth) .. .. (444,350)	27	9	36	17	3	20
Hull, Kingston-upon (301,000)	9	3	12	8	5	13
Southampton .. .. (207,220)	14	5	19	5	1	6
Bristol.. .. .. .. (433,920)	29	2	31	38	1	39
Birmingham .. .. (1,115,630)	23	5	28	33	15	48
Leeds and Bradford .. (810,840)	10	5	15	10	1	11
Sheffield .. .. .. (495,290)	2	3	5	18	5	23

Figures in brackets denote estimated population at 30th June, 1963.

The number of cases in men in the London area increased from 555 to 576 but those in women decreased very slightly from 93 to 91, so that the total number of cases in this area increased from 648 to 667. The number of cases in males also increased on Merseyside, at Manchester, Bristol, Birmingham and Sheffield. It decreased on Tyneside, at Hull and at Southampton; at Leeds and Bradford the numbers were unchanged. Cases in women showed only minor variations, rising slightly on Merseyside, at Manchester, Hull, Birmingham and Sheffield, but falling on Tyneside, at Southampton, Bristol, Leeds and Bradford. The effect of disease acquired by practising homosexuals and introduced from abroad by migrants in increasing the disparity in the number of cases in males over females, has been discussed in previous reports and it seems likely that these agents are still important in the spread of syphilis.

Up to the present no information has been available as to the ages of patients suffering from infectious syphilis. Returns from the clinics for 1963 provide this information which is summarised in Table IV.5. From this, it may be seen that of 925 individual men attending with primary or secondary syphilis during that year, 62 or 6·7 per cent were under the age of 20 years. Of 174 women, 42 or 24 per cent were under twenty. The Co-operative Clinical Group of the Medical Society for the Study of Venereal Diseases has for the first time undertaken a study of the distribution of cases of early syphilis, that is syphilis in the first year of infection including primary, secondary and early latent cases, in the various racial groups of which our society is now composed. The study relates to 1,513 cases treated at 173 clinics of England and Wales during 1963. Sixty-two point six per cent of infections in men were in persons born in the United Kingdom, 6·6 per cent were in West Indians and 30·7 per cent were in other immigrants. Of infections in women, 59·4 per cent were in patients born in the United Kingdom, 29·1 per cent were in West Indians and 11·5 per cent in other immigrants, a curious difference in distribution from that which was found in cases of gonorrhoea (*see* page 67).

Returns from the clinics show that "contact slips" requesting the attendance of those who were said to have had intercourse with patients suffering from primary or secondary syphilis, were issued to 379 of the 951 infected men and to 74 of the 176 infected women. The use of contact slips is only one of the methods employed to secure the attendance of consorts of patients with infectious venereal disease but it is the one most widely used. The result of efforts to trace contacts was that 66 infected men and 76 infected women were brought under treatment.

Cases of late syphilis continue to decline in numbers. They are, of course, the legacy of earlier years representing cases of early syphilis which failed to reach diagnosis and treatment. The present numbers reflect the low incidence of cases of early infection some years ago and it is to be expected that with the rise in early syphilis a rise in late cases of the disease will follow after some intervening years. The difficulty of distinguishing between cases of late latent syphilis and those in which positive blood tests are due to yaws in childhood, in immigrants from areas where yaws is endemic, was discussed in the Report for 1962. The distinction is made on grounds which are seldom reliable and it is likely that the returns for cases of late latent syphilis are inaccurate in consequence of this. The number of cases of yaws reported from the clinics in 1962 was 566. In the returns for 1963 the equivalent figures appear under the heading "Late or Latent Treponematoses presumed to be non-Syphilitic" and amounted to 1,062. Details regarding cases of late syphilis are shown in Table IV.2.

TABLE IV.2
Late syphilis

	Year	Males	Females	Total
Cardiovascular syphilis	1962	158	61	219
	1963	129	69	198
Neurosyphilis	1962	232	117	349
	1963	209	102	311
All other late or latent stages	1962	1,003	1,007	2,010
	1963	782	838	1,620
Total late or latent stages..	1962	1,393	1,185	2,578
	1963	1,120	1,009	2,129

The Registrar-General's figures for 1963 show that deaths from those forms of late syphilis of the nervous system which are particularly lethal, namely general paralysis and tabes dorsalis, remain at a low level. Nevertheless there has been a slight increase in the number of men who died from general paralysis and tabes dorsalis; fewer women died from general paralysis but rather more from tabes. Deaths from syphilitic aortic aneurysm which had increased a little in 1962 showed a decline in 1963, the number of men dying from this condition decreasing appreciably and the women increasing a little (Appendix C, Table E).

The incidence of early congenital syphilis remains very small by the standards of the past. The number of new cases in infants under one year was, however, 16 in 1963 as compared with 11 in 1962. The fact that cases are so few in spite of some increase in infectious syphilis of adults is a tribute to the efficacy of preventive measures, of which routine serological tests for syphilis in pregnancy are the most important. The number of cases of congenital syphilis discovered in older children rose from 307 in 1962 to 346 in 1963.

Testing for syphilis in pregnancy

Table IV.3 gives results of serological tests on pregnant women reported from 6 regional blood transfusion centres which are responsible for routine serological tests in the region concerned.

TABLE IV.3
Syphilis tests in pregnancy, 1963

	Number of ante-natal patients tested			Positive syphilis tests				
	Primiparae	Multiparae	Parity not known	Primiparae		Multiparae		Parity not known
				No.	Per cent	No.	Per cent	No.
Cambridge.. ..	9,524	6,562	861	9	0·095	17	0·259	2
Leeds	11,540	7,710	1,313	9	0·078	17	0·22	3
Liverpool	22,053	27,167	..	32	0·145	39	0·143	..
Oxford	4,186	4,202	277	10	0·239	4	0·095	..
Plymouth	2,052	2,220	..	19	0·926	14	0·631	..
Sheffield	18,992	9,913	..	33	0·174	34	0·343	..

A summary of results of these tests in the cases of primiparae and nulliparae at these centres during the last 7 years is given in Table IV.4. These figures, small as they are, are probably inflated by the fact that a number of them relate to women immigrants from areas where yaws is endemic. The fact that such positive tests may be due to diseases other than syphilis has been mentioned already.

TABLE IV.4

Year	Number of Primiparae	Percentage Positive	Number of Multiparae	Percentage Positive
1954	39,181	0·23	47,941	0·32
1955	41,392	0·21	40,712	0·43
1956	48,420	0·28	40,295	0·35
1957	49,914	0·14	43,730	0·29
1958	49,315	0·13	40,765	0·23
1959	56,962	0·14	46,531	0·16
1960	61,606	0·08	46,349	0·14
1961	67,294	0·13	49,583	0·27
1962	61,872	0·11	48,433	0·19
1963	68,347	0·16	57,774	0·22

Gonorrhoea

Some satisfaction was expressed a year ago that the number of new cases of gonorrhoea reported from the clinics in 1962 had shown a decline for the first time in 8 years. The decline was small, amounting to 4·5 per cent, but it gave reason for hope that the alarming trend of recent years might have been reversed. The total number of cases in 1962 was 35,438 and that for 1963 was 36,049, an increase of 1·6 per cent. Although this is disappointing it does at any rate suggest that the curve of increase is flattening and offers some hope that measures for control may in due course reverse the trend. Nevertheless the figure remains considerably higher than that for 1939 (31,300) and since that time has been exceeded only in 1946 (47,343), 1947 (36,666) and 1961 (37,107). The increase in 1963 was confined to women. The number of cases in men declined from 28,329 in 1962 to 27,895 in 1963; those in women increased from 7,109 in 1962 to 8,154 in 1963.

As in past years the figures indicate cases and not patients; individual patients who contract gonorrhoea on more than one occasion during the year under review add to the total. For the year 1963 the form (V.D. (R).) on which information is supplied by all clinics was revised to provide more detailed information on various aspects of the problem, including this distinction between "cases" and "patients". The returns indicate that the number of patients who contracted gonorrhoea during 1963 was 31,547 and, as already noted, these were responsible for 36,049 cases, showing clearly that multiple infections are very common. The new form of return also indicates the age groups of infected patients. The ages of patients suffering from primary or secondary syphilis and from gonorrhoea are shown in Table IV.5.

TABLE IV.5

Age groups of patients suffering from infectious syphilis and gonorrhoea

Age	Primary and Secondary syphilis			Gonorrhoea		
	Total	Men	Women	Total	Men	Women
Under 16	2	1	1	225	46	179
16 and 17	36	16	20	1,006	389	617
18 and 19	66	45	21	2,748	1,484	1,264
20–24..	298	237	61	10,053	7,450	2,603
25 and over	697	626	71	17,515	14,732	2,783
Totals	1,099	925	174	31,547	24,101	7,446

It will be seen that the incidence of gonorrhoea in young people is considerable and this is particularly true of girls. There were 182 cases of gonorrhoea in girls under 16 and the number of cases in girls aged 16 to 19 was 2,091 as compared with 2,043 cases in boys of the same age. The recent Report by a Committee of the British Medical Association has drawn further attention to the gravity of this problem. The Committee has endeavoured to assess the causes and has suggested remedies which for the most part lie in the field of sociology rather than of medicine.

The question of the contribution which immigrants make to this problem has again been studied by the Co-operative Clinical Group. Information as to the countries of origin of patients who suffered 35,740 attacks of gonorrhoea in 1963 was obtained from 173 clinics of England and Wales. Twenty-five thousand nine hundred and forty-two of these attacks affected men and 7,459 were in women. Of the men, 46·3 per cent were born in the United Kingdom, 25·2 per cent in the West Indies and 28·5 per cent in other countries. Of the women, 77·9 per cent were born in the United Kingdom, 10·5 per cent were West Indians, and 11·6 per cent were other immigrants.

At the clinics contact slips were issued to 11,917 men and 1,233 women suffering from gonorrhoea, a total of 13,150 patients. As the result of this and other measures only 802 men and 3,825 women, totalling 4,627 patients suffering from gonorrhoea, attended for treatment.

Ophthalmia neonatorum due to the gonococcus or to other organisms has received little attention in recent years. Presumably one reason for this is that modern methods of treatment are so effective that, if they are promptly applied, blindness and impairment of vision do not occur. Nevertheless these infections remain a considerable danger to the eyes of infants born of infected mothers and the mothers who harbour infection also incur danger from the possibility of upward spread of the infection as the result of the trauma of childbirth. Information collected by the Public Health Laboratory Service during the last 2 months of 1963 showed that of 83 causal agents identified in cases of ophthalmia neonatorum 15 were *Neisseria gonorrhoeae*, the causative organism of gonorrhoea. It is by no means clear that all these cases were notified to Medical Officers of Health and to the Registrar-General in accordance with the Ophthalmia Neonatorum Regulation of 1914 and there are good reasons for reminding house officers of their responsibilities in this matter. The time to diagnose and treat these infections is during pregnancy and the question of taking microscopic tests and routine cultures from the secretions of urethra and cervix of pregnant women as part of ante-natal care might be considered with advantage by all obstetric departments.

The consultant venereologist at H.M. Prison, Holloway, reported that the number of prostitutes admitted to the prison declined from 582 in 1962 to 415 in 1963 and the total number of admissions of these women from 980 to 712. Of the prostitutes, 85 (20 per cent) were between the ages of 15 and 20 years and 140 (34 per cent) between the ages of 21 and 25. Of the total of 415 prostitutes 27 were not examined because their fines were paid at once and they left the prison; another 19 refused tests in the course of 52 admissions. Of those examined, 20 per cent were suffering from gonorrhoea and 1·9 per cent from syphilis. Of the 85 girls between 15 and 20 years of age, 78 were examined and 19 (22 per cent) were found to have gonorrhoea, 2 of them on 2 occasions and one on 3 occasions. Thirty-nine of the prostitutes were pregnant and of these 7 were suffering from gonorrhoea and one from early syphilis. All the cases of syphilis found in prostitutes, 7 in number, were early cases and therefore infectious. Four were described as very infectious. As in previous years the number of cases of gonorrhoea diagnosed was believed to be less than the true number of infections because of the difficulty of establishing the diagnosis in some cases and the fact that so many of the women were remanded in custody only for a very short time.

Other Venereal Diseases

Non-gonococcal urethritis in males again showed an increase as it has each year since it was first reported in a separate category in 1951. As in 1962 the total increase was not large, the number of cases rising from 24,494 in 1962 to 25,001 in 1963. Cases in female consorts of men suffering from this disease are included in "Other Conditions requiring Treatment" because of the difficulty in making this diagnosis in females. The number of these cases in females rose from 16,973 in 1962 to 19,206 in 1963.

Other venereal diseases remain uncommon. New cases of chancroid increased slightly from 157 in 1962 to 159 in 1963 but as in other developed countries, this disease now presents a very small problem. Most of the cases are found in clinics situated at sea ports and are presumably introduced from countries in which the disease remains common. Cases of lymphogranuloma venereum amounted to 102 in 1963 as compared with 96 in 1962 thus showing a small increase. Cases of granuloma inguinale declined from 16 in 1962 to 10 in 1963.

Other conditions treated at the clinics

In Table A of Appendix C it is shown that during 1963 cases at the clinics in which active treatment was required for genital conditions which were not classed as venereal infections amounted to 39,131 as compared with 36,217 in 1962. There were also 42,058 cases in which investigations gave negative results and only reassurance was required, as compared with 37,784 in 1962. This function of the clinics in excluding infection of those who have taken risks and in reassuring anxious patients continues to be a major and most important part of the service given.

The present position

The increase in venereal disease remains a matter for anxiety and the fact that, judging by reports from other countries, the problem is considerably greater elsewhere is a matter of small consolation. That the spread of these diseases has been contained to some extent is a tribute to the organisation and efficiency of the venereal diseases service and to the fact that the service was not dismantled at a time when many thought that the problem was solved. The main present anxiety is about the rise in infectious syphilis. Syphilis is an inconspicuous, insidious disease which is often difficult to diagnose, especially in its early stages. The fact that it has been so uncommon for years past has led to diminished alertness on the part of many members of the medical profession and the present situation calls for frequent reminders that this disease is becoming more common and that it occurs even in people who are not habitually promiscuous. It is perhaps too much to hope that there will be any considerable reduction in the incidence of gonorrhoea while the present movement of population continues. However, as already described, the curve of increase seems to be flattening and there are hopes that by renewed efforts satisfactory control may soon be established. This disease is highly infectious and has a short incubation period; it spreads with considerable rapidity among promiscuous people. One respect in which there is room for improvement in present methods of control is in the matter of contact tracing. Most doctors at the clinics still rely on their patients to persuade those with whom they have had intercourse to attend for diagnosis and treatment. This works fairly well in regard to those people, such as wives, sweethearts and girl friends, whom the individual concerned may have infected. It is not very successful in bringing under treatment the sources from which infections have been acquired, for they are often casual strangers, prostitutes and highly promiscuous women, who are seldom co-operative people and are apt frequently to change their places of abode. Clinics in the West Riding of Yorkshire have claimed more success than most in this difficult task by seeking the help of the Local Health Authorities to trace these infected people by a procedure based on the recommendations of the Ministry of Health Circular 5 of 1948. The London County Council is now to give a lead in this matter by setting up an experiment, based at two large clinics in London, in which prompt and diligent tracing of contacts and sources of infection will be undertaken by trained social service workers. The dangers of asymptomatic and undiagnosed infection in women who have taken risks is to be brought to the notice of almoners, social workers, probation officers and those who are in a position to give advice to young women to whom this possibility may apply. A pamphlet dealing with the salient points concerning these dangers is in course of preparation at the Ministry. The search for the cause of nongonococcal urethritis continues and is being supported by the Medical Research Council. Progress in control of this disease is unlikely until the cause is known.

During 1963 a further television programme on venereal diseases and their dangers was produced by the Granada Television Company and reached a wide audience. A film based on this television presentation is now available at the Central Film Library. Newspapers and magazines have again co-operated in putting facts about these diseases before the public. There is, however, scope for further propaganda of this kind. Attention has been drawn repeatedly to the high incidence of venereal infection, particularly early syphilis, among practising homosexuals and to the fact that so many of them seemed to be unaware of these dangers. It was hoped that a recent leading article in the *Lancet* dealing with this problem might have received publicity in the lay press, but unfortunately this hope was not realised.

V

TUBERCULOSIS

Tuberculosis services have been in a transitional phase for a number of years during which the Tuberculosis Clinic has gradually merged into the Chest Clinic, providing a wide range of diagnostic services, but with close liaison between the Chest Physician and the Medical Officer of Health. With the replanning of the hospital services, many new hospitals and the integration of the chest clinic into these new general hospitals, some fears have been expressed that tuberculosis will no longer be regarded as an epidemiological problem and the tracing and examination of contacts will be prosecuted less vigorously than before. It has been said also that because of the decline in tuberculosis we are apt to assume that the decline will continue.

The figures quoted in this report both of new notifications and of deaths are good and sufficient reminder that complacency cannot be accepted in the tuberculosis programme. They record progress, but remind us that tuberculosis is still a more frequent cause of death than any of the notifiable acute specific infections. There are a number of requirements which should be clearly recognised. They include an extensive chest radiology service; adequate beds for all cases requiring hospitalisation; drug régimes which are known to be satisfactory and which if properly followed should prevent the emergence of drug resistant organisms; a programme of B.C.G. vaccination.

These are the basis of any plan to combat tuberculosis. To them must be added the diligent attention of the staffs of chest clinics and local health authorities to the traditional preventive measures of the tuberculosis service. Their work will continue and if its magnitude happily continues to diminish, its intensity should be no less. Indeed as the frequency of tuberculous infection declines, the possibility of tracing the individual source of infection increases.

Cases of Tuberculosis Attending the Chest Clinics

Chest clinics are now asked to make returns to show how many cases of tuberculosis have occurred during the year in patients who in the opinion of the chest physician require supervision because of a tuberculous lesion, and the total of such patients under supervision, irrespective of whether the cases have been notified.

The number of newly notified cases is available as in previous years from the returns made by medical officers of health. The purpose of this modified return is to give a more complete picture of tuberculosis known and under control than was previously available from the clinic when only notified cases were included.

The total of cases under supervision on December 31st, 1963, was 346,371. New cases numbered 29,105 of whom 26,749 were of respiratory and 2,356 of non respiratory tuberculosis.

The number of cases whose broncho-pulmonary secretion was found to contain *M. tuberculosis* during the year was 12,251, a striking illustration of the reduced level of infective tuberculosis in the community compared with a decade ago when the figure was a little over 24,000.

Chest Radiology

One of the most widely used facilities of the National Health Service is the Chest Radiology Service provided at hospitals, chest clinics and mass radiography units. Tables B.7 and B.8 of the appendix relate to the work of the mass radiography units during 1962. Approximately 3,245,000 persons were examined and 4,180 cases of tuberculosis requiring treatment or close clinic supervision were disclosed, 1·3 per 1,000 examined. The three largest groups were general practitioners' referred cases 234,000 with 6·1 cases per 1,000; volunteers from factories and offices 1,791,000 with 0·8 cases per 1,000 and general public volunteers 982,000 with 1·0 cases per 1,000. Once more the value of a direct chest radiology service to general practitioners is shown.

Table B.7 lists some of the non-tuberculous conditions which are found by the units. They include 2,848 malignant neoplasms and 724 cases of sarcoidosis and enlarged hilar glands and over 2,000 cases of pneumoconiosis.

As the chest radiology service merges into the hospital radiology service it becomes increasingly difficult to make a separate note of its findings. There is, however, ample evidence from past and present figures to point its worth.

Mortality

The provisional figures of tuberculosis deaths registered in England and Wales for the year 1963 are as follows.

Tuberculosis deaths by sex and age
England and Wales, 1963

		All ages	0–	1–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75+
Respiratory tuberculosis (001–008)	M	2,022	1	1	1	–	4	2	31	159	300	631	595	297
	F	587	–	1	1	–	–	4	40	99	114	119	106	103
Tuberculosis of meninges and C.N.S. (010) ..	M	37	1	9	1	2	3	1	2	8	6	4	–	–
	F	34	1	9	–	5	4	2	3	5	2	2	1	–
Tuberculosis, other (011–019)	M	132	1	–	–	–	2	6	2	20	20	36	29	16
	F	148	–	2	–	–	2	1	9	10	25	23	34	42

The total deaths were 2,962 (3,088 in 1962) a modest fall of 4 per cent on the previous year. Among young people up to the age of 20 the deaths from all forms of tuberculosis numbered 51 and nearly 62 per cent of all tuberculosis deaths were of the respiratory form in men of 45 years and over.

Central Register of Drug Resistant Cases

Work towards establishing the register continues and at the end of the year the number of cases registered in England and Wales numbered 3,021. They fell under the following categories:—

Resistant to	
Streptomycin	268
Para Amino Salicylic Acid	66
Isoniazid	568
S+P.A.S.	101
S+I.N.H.	507
P.A.S.+I.N.H.	307
S+P.A.S.+I.N.H.	989
Patients excreting sensitive Tubercle Bacilli despite six months chemotherapy with one or more of these drugs	209
Tubercle Bacilli excreted of unknown sensitivity despite six months chemotherapy with one or more of these drugs	6

Notifications: Local Authority Areas

Table B.6 lists the notifications per 100,000 of the population for respiratory and non respiratory cases of tuberculosis in Local Authority areas together with the average notifications for the previous five years. Most areas show a fall in the notification rates and only very few show a slight increase in notification for the years 1958-63 compared with that for 1958-61.

B.C.G. Vaccination

The total number of vaccinations performed among nurses, students, contacts and school children was nearly 496,000 of whom nearly 410,000 were school children in the age groups from 10 to school leaving. Of the 538,627 children skin tested 78,386 were found to be positive and 446,952 were negative. Of those completing the test 14·9 per cent were positive.

Absence from Work for Tuberculosis

Tuberculosis is still extremely important as a cause of absence from work. Among men, there were estimated to be 13,300 spells of absence from work starting in the period 1960–61. Although this is but 0·2 per cent of all sickness absence starting during that time, the duration of the absence is relatively long, and during the same period 6,750,000 days of absence were recorded from tuberculosis in men. This in days lost is equal to 3·4 per cent of all sickness absence days and is more than three times greater than absence from all the other infectious diseases together (other than colds and influenza.)

In 1951, there were 14,120,000 days absence reported from tuberculosis in men and thus in ten years there has been a reduction of over one half in working time lost because of this disease. This is roughly comparable to the decrease in the number of notifications.

In 1960–61 the number of days absence recorded as due to tuberculosis in women was 2,750,000. Whether a woman works depends very much on her social circumstances, as does also her need to pay contributions for sickness benefit. It is thus difficult to be sure of the meaning of statistics of sickness absence among women and they have not been dealt with in any detail.

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* Data in this section are taken from reports of the Ministry of Pensions and National Insurance.

THE CANCERS

The number of deaths ascribed to malignant disease in 1963 was 102,416, an increase of 811 over the 1962 figure. Lung cancer once again stands out as the biggest factor in this increase and, with 24,259 deaths, accounted for nearly one quarter of all deaths from cancer.

The Cancers of Childhood

The development of a malignant condition and in particular of leukaemia in a child is such a deeply disturbing and tragic event that its comparative rarity tends to be obscured.

In 1963 in England and Wales a total of 23,259 children under 15 years of age died from all causes and of those deaths 820 were ascribed to malignant disease, that is less than four out of every hundred deaths were due to cancer, and less than half of those, 364, were due to leukaemia.

In the same year 102,416 people of all ages died from cancer and the proportion of those occurring in children under 15 was 0·8 per cent.

Although the prevalence of malignant disease is much less in early than in later life cancer has assumed more prominence as a cause of death in childhood since the marked decline in deaths from other causes, especially the infections which now can be prevented or more effectively treated. In 1943 a total of 47,896 deaths from all causes under the age of 15 years were recorded and of those 524 or 1·1 per cent were ascribed to malignant disease as compared with 3·5 per cent in 1963.

The increased prevalence of childhood leukaemia is noted in many countries and it is suggested this may be inversely related to the decrease in childhood pneumonia deaths. It is noteworthy in this connection that the association of leukaemia with mongolism was not apparent until the life expectancy of mongols increased from less than two years to over 14 years—pneumonia was one of the commonest causes of the early deaths of mongols.

Mongolism is commonly associated with a chromosome abnormality and mongols are uncommonly liable to develop leukaemia. Barber and Spiers (1964) estimated that the age-specific leukaemia death rate for mongols is about 30 times higher than the rate for others.

Although there is scarcely any type of neoplasm which is never encountered in a child, the sites of cancer which are common in adults are rarely affected in children. In 1963 no deaths in the under 15 age group were reported for example in the following sites: stomach, rectum, breast, cervix and oesophagus.

The main sites involved were:—

TABLE VI.1

Deaths in 1963, England and Wales, from malignant diseases in children from 0 to 15 years old by sex and main sites—and percentage of main sites to the total

	M	F	Persons	per cent
Lymphatic and haematopoietic system (200–205)	258	174	432	53
(of which leukaemia and aleukaemia	204	160	364	44)
Brain and nervous system (193)	117	75	192	23
(of which brain	72	48	120	15)
Kidney	32	25	57	7
Bone	11	12	23	2·8
Digestive organs	13	9	22	2·7
Supra-renal	8	12	20	2·4
TOTAL—all sites (140–205)	485	335	820	

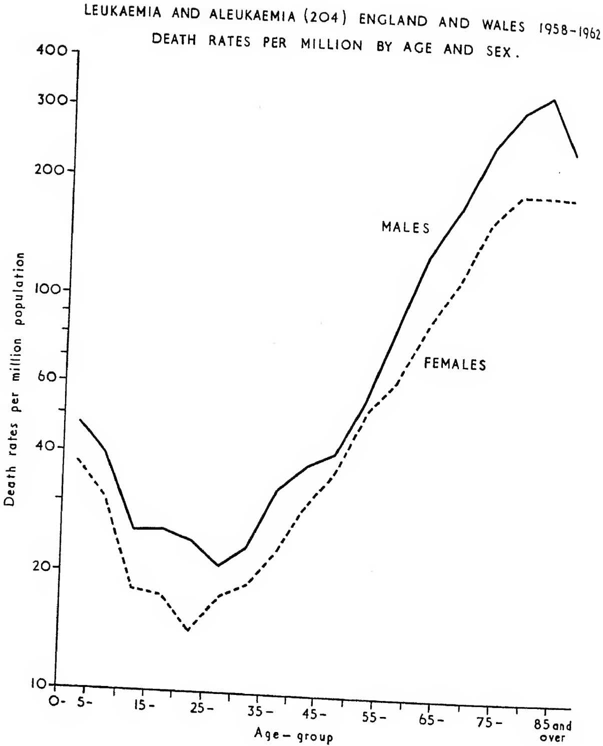
Leukaemia accounts for nearly half of all childhood cancer deaths and for 13 per cent of deaths from leukaemia at all ages; this, if compared with the proportion 0·8 per cent given above of all childhood cancer deaths to the total of cancer deaths at all ages, indicates the relative importance of leukaemia in children.

A breakdown of childhood leukaemia deaths in 1963 shows that 85 per cent of all the cases were diagnosed as acute leukaemia, the rest being almost equally divided between the lymphatic, myeloid and monocytic types.

Although nine out of ten children suffering from acute leukaemia die within a year, and of the untreated cases half die within four months, there is no doubt that modern treatment with cytotoxic drugs has considerably increased the length of symptom-free remissions. In one series of fifty-two cases the drug 6-mercaptopurine gave a 50 per cent survival time of twelve-and-a-half months. It has been found that a combination or rotation of three or four of the drugs most effective in acute leukaemia tends to prevent resistance to any one particular drug developing and in favourable cases appears to lengthen the remissions. Remissions may be so complete that the hope of prolonging them still further, if not indefinitely, can be entertained.

There is no satisfactory evidence that childhood malignancies, with the possible exception of some leukaemias, are induced by environmental agents. Many of them arise from embryonic tissue and occur in early post-natal life, some may be present at birth and numbers originate in utero. The question as to whether ante-natal X-rays can cause childhood leukaemia is an important one on which Stewart and others (Stewart, Webb and Hewitt, 1958; Court-Brown, Doll and Hill, 1960) have made valuable contributions but on which further work is required—the verdict at present remains "not proven".

Figure 1 shows the death rate per million, 1958–1962, for leukaemia and aleukaemia for all ages; Figure II the trend of childhood leukaemia from 1932–1962 in the two age groups—under 5 and 5 to 14 by sexes.



LEUKAEMIA AND ALEUKAEMIA (204) ENGLAND AND WALES 1958-1962
DEATH RATES PER MILLION BY AGE AND SEX.
400
300
200
100
60
40
20
10
Death rates per million population
MALES
FEMALES
0-
5-
15-
25-
35-
45-
55-
65-
75-
85 and over
Age-group

FIG. I

LEUKAEMIA AND ALEUKAEMIA (204) ENGLAND AND WALES
DEATH RATES PER MILLION PER YEAR FROM 1932-1962
IN AGE-GROUPS UNDER 5 YEARS, 5 14 YEARS, MALE
AND FEMALE.

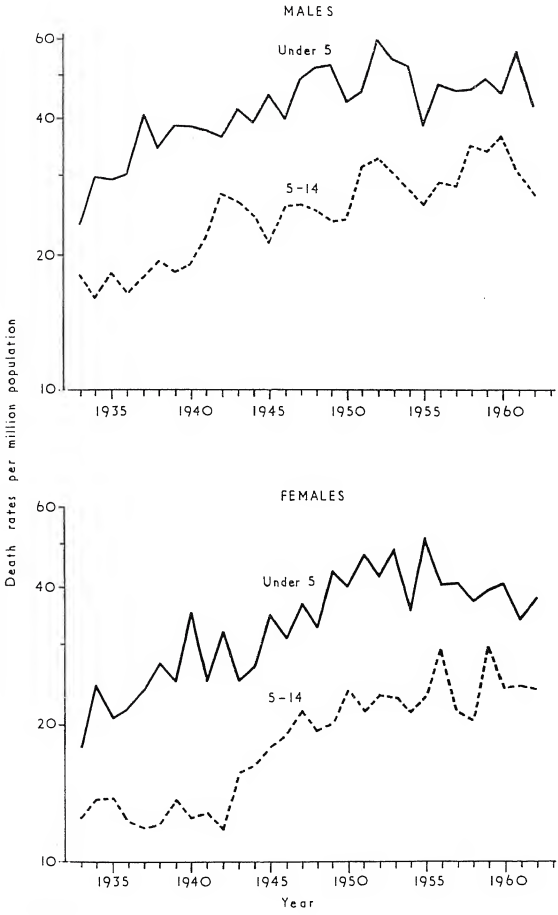


FIG. II

Smoking and Cancer

Although cancer of the lung is the only cancer certainly connected causally with cigarette smoking there is evidence that cigarette smokers have a higher mortality than non smokers from cancer of other sites. The recent American Report (United States Public Health Service, 1964) lists six sites with their mortality ratios (compared with unity for non-smokers)—cancer of the lung 10·8; cancer of larynx, 5·4; oral cancer, 4·1; cancer of oesophagus, 3·4; cancer of bladder, 1·9; cancer of kidney, 1·5.

The Americans have confirmed in considerable detail the report of the Royal College of Physicians (1962) mentioned in the 1962 report and their report has given a timely reinforcement of its effect on public opinion.

Apart from a drop in cigarette smoking due partly to abstention from the habit and partly to a switch to pipes and cigars and unhappily not fully maintained the main outcome of the R.C.P. report is shown in the continuing and increasing education programme aimed at preventing the youth of the country from acquiring the habit. Surveys show that the age of ten years is none too early for tackling the boys.

The Children and Young Persons Act, 1963 increases by tenfold the previous penalties for the sale of tobacco to persons apparently under 16 and for failing to comply with an order for the removal of an automatic cigarette selling machine or for failure to prevent its being used by persons under 16 years.

This particular requirement can only be fully effective if the public play their part in its enforcement.

Anti-smoking clinics

Experiment with clinics designed to help smokers who wish to desist also stems from the R.C.P. Report. The response by Local Health Authorities to the Ministry's suggestion that experimental clinics might be tried was limited. 24 clinics—two in hospital departments—were started. Sufficient experience has not yet been gained to assess the value or even the need of such clinics. From reports available some 2,500 have attended and less than one-third of them gave up smoking, and as many as half of this group relapsed within six months; another third reduced their smoking considerably and the rest failed to benefit, most of them giving up after only one or two attendances, disillusioned at the lack of any rapid "magic" cure.

Smoking in hospitals

In May the Ministry sent out Circular H.M.(63) 43 giving guidance on smoking in hospitals and asking hospital authorities to review their rules in the light of it.

The response shows that 97 per cent of hospitals have realised the importance of smoking restrictions and the position now is that:—

per cent of hospitals		
81	..	have forbidden smoking by out-patients other than in a canteen separated from the waiting area.
9	..	have forbidden smoking in wards.
72	..	have restricted smoking in wards.
34	..	still display cigarettes for sale.
79	..	prohibit visitors smoking in wards.
100	..	forbid staff to smoke in treatment areas, kitchen and food preparation rooms.
78	..	forbid staff to smoke in parts of the hospital open to patients or the public.

The importance of the influence of the example set by staff—especially professional staff—is manifest.

Chorion-epithelioma Unit

The provision of a Sterile Unit recently opened at Fulham Hospital for the treatment of chorion-epithelioma recognises the excellent results achieved by the use of methotrexate in this disease whilst at the same time emphasising the dangers inherent in the treatment, particularly from bacterial infection. This unit is provided with laboratory facilities for the measurement by immunological means of the amounts of gonadotrophin in blood and urine, whereby the dosage of this drug can be controlled.

The Early Detection of Cancer of the Uterus

Since this subject was last discussed in the Report for 1961 there has been considerable progress. The Minister's Standing Medical Advisory Committee has recommended that the provision of cytological facilities in hospital pathology departments should be accelerated, and that special training in the necessary techniques for pathologist and technicians should be encouraged. It advised that, for the present, expansion of cytology services should be organised to meet the needs of hospital clinics and of general practitioners. Regional Hospital Boards have been asked to treat this service as one of recognised importance for the future and to decide in this light the degree of priority to be given to hospital cytology services.

There has in fact been considerable expansion of services, though they are far from complete, and it will be a considerable time before all women at risk can be offered a regular routine examination with the aim of forestalling invasive cervical cancer.

One of the chief difficulties to be overcome is the shortage of staff trained in cytology. To help overcome this the Minister has invited five hospital boards to provide training centres and it is expected that these will be operating during the course of 1964. These centres, which are to be situated at Newcastle, Manchester, Birmingham and London (at the Postgraduate Hospital, Hammersmith and at the Royal Free Hospital), should be able to provide enough places on these courses to train the specialised staff needed for routine cytological examination of the priority group, women between the ages of 35 and 60, at five-yearly intervals and to provide facilities for all gynaecological out-patients.

The most satisfactory method of collecting material for routine screening and the best ways of approaching the public have yet to be fully worked out and these problems are being investigated with the Department's encouragement. In addition, plans to evaluate the results of early cytological diagnosis and treatment, are being prepared.

There is a strong possibility that other methods of examining cellular material from the cervix will eventually displace conventional microscopy. The Department is also encouraging work on these lines.

It must of course not be overlooked that there are other important aspects of cytological diagnosis. The centres now forming for training in cytology are planning instruction in other branches of the subject, including the malignant cytology of other organs, hormonal cytology and the use of cytology in the control of radiotherapy of uterine cancer.

The National Cancer Registration Scheme

A conference on Cancer Registration was held at the Ministry in February. Representatives from the Services, the Scottish Home and Health Department, the M.R.C. Social Medicine Research Unit, the General Register Office, from all the regional cancer registries in England and Wales and from the Ministry were present.

In spite of the variety of approaches by the various registries it was agreed that the scheme should be a feature of any well organised cancer service.

The conference recommended the setting up of a Working Party. This was arranged by the end of the year and its terms of reference are—"to consider the present organisation and techniques of regional cancer registries, and to make recommendations for their application".

Confirmed registrations in 1961 totalled 109,000.

TABLE VI.2

Mortality from cancer (140–205), England and Wales, 1950–63

Year	No. of Deaths			Crude death rate per million living		*Standardised mortality ratio (base years 1950–1952 taken as 100)	
	Males	Females	Persons	Males	Females	Males	Females
1950	43,570	41,700	85,270	2,058	1,840	98	101
1951	44,632	41,448	86,080	2,121	1,820	101	99
1952	45,429	42,213	87,642	2,152	1,848	101	99
1953	45,935	41,989	87,924	2,166	1,833	102	98
1954	47,313	42,782	90,095	2,223	1,861	103	98
1955	48,160	43,180	91,340	2,252	1,873	104	98
1956	48,935	43,775	92,710	2,274	1,891	105	97
1957	50,056	43,961	94,017	2,312	1,890	106	96
1958	50,735	45,069	95,804	2,333	1,929	106	97
1959	51,783	45,334	97,117	2,366	1,929	107	97
1960	52,779	46,009	98,788	2,391	1,943	108	97
1961	53,441	46,474	99,915	2,392	1,951	108	96
1962	54,735	46,873	101,608	2,416	1,952	109	96
1963	55,192	47,224	102,416	2,417	1,952	110	96

* The "Standardised mortality ratio" replaces the "Comparative mortality index" used prior to 1958

TABLE VI.3

Deaths from cancer of certain sites, England and Wales, 1963

International Statistical Classification No.	Sites	No. of deaths registered		Rate per million living		Proportion per 1,000 total cancer deaths	
		M.	F.	M.	F.	M.	F.
140–159	*Total digestive system*	20,045	19,045	878	787	363	403
140	Lip	55	6	2	0	1	0
141	Tongue	268	124	12	5	5	3
143–148	Buccal cavity and pharynx	589	414	26	17	11	9
150	Oesophagus	1,375	1,064	60	44	25	23
151	Stomach	7,744	5,937	339	245	140	126
152, 153	Intestine (except rectum)	3,658	5,503	160	227	66	117
154	Rectum	2,935	2,533	129	105	53	54
157	Pancreas	2,238	1,985	98	82	41	42
160–165	*Total respiratory system*	21,563	3,948	944	163	391	84
161	Larynx	632	140	28	6	11	3
162, 163	Lung, bronchus, pleura and trachea	20,757	3,677	909	152	376	78
170–179	*Total breast and genital organs*	4,220	16,963	185	701	76	359
170	Breast	70	9,442	3	390	1	200
171	Cervix uteri	..	2,465	..	102	..	52
172–174	Uterus (other than cervix)	..	1,504	..	62	..	32
175	Ovary	..	3,050	..	126	..	65
177	Prostate	3,795	..	166	..	69	..
179·0	Penis	104	..	5	..	2	..
180, 181	*Total urinary system*	3,094	1,431	136	59	56	30
180	Kidney	824	522	36	22	15	11
181·0, ·8	Bladder	2,250	890	99	37	41	19
190, 191	Skin	409	444	18	18	7	9
192, 193	Eye, brain and nervous system	1,183	909	52	38	21	19
194	Thyroid	100	300	4	12	2	6
196, 197	Bone and connective tissue	403	359	18	15	7	8
195, 198, 199	All other and unspecified	1,004	1,244	44	51	18	26
200–205	*Total Lymphatic and Haematopoietic tissues*	3,171	2,581	139	107	57	55
201	Hodgkin's disease	521	305	23	13	9	6
204	Leukaemia and aleukaemia	1,511	1,319	66	55	27	28
140–205	*Total Cancer*	55,192	47,224	2,417	1,952	1,000	1,000

Comment on Table VI.3

Increases

In both sexes:—
Lung—male by 2·4 per cent, female by 5 per cent.

In male only:—
leukaemia and aleukaemia by 8·5 per cent, and *pancreas* by 6 per cent.

In females only:—
thyroid by 8·3 per cent; *eye, brain and nervous system by* 7·4 *per cent*; and *rectum* by 3 per cent.

Decreases

In both sexes:—

Hodgkins disease:—male by 5·3 per cent, female by 13·3 per cent;

bone and connective tissue:—male by 13 per cent and female by 12 per cent;

intestine:—male by 4 per cent, female by 1·4;

buccal cavity:—male by 7·2 per cent and female by 2 per cent;

In males only:—
bladder by 3·1 per cent.

In females only:—
cervix by 1·8 per cent.

Female breast cancer deaths totalled 9,442, accounting for one-fifth of all female cancer deaths. The increase of 91 over the 1962 figure is under 1 per cent.

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VII

MATERNAL AND CHILD HEALTH

Use of Maternity Beds

The pressure upon the maternity services associated with an increase in the number of births and an increase in the demand for hospital confinement which was discussed in the last annual report has continued. In 1963 the births rose to 869,044 total births.

TABLE VII.1

Year	Live birth rate	No. of live births	No. of stillbirths	Maternal mortality rate including abortions per 1,000 total births	Perinatal mortality rate per 1,000 total births	Percentage of confinements	
						In all institutions	In N.H.S. hospitals
1955	15·0	667,811	15,829	0·59	37·4	64·3	60·2
1956	15·7	700,335	16,405	0·52	36·7	64·3	60·4
1957	16·1	723,381	16,615	0·45	36·2	64·3	60·6
1958	16·4	740,715	16,288	0·43	35·0	64·1	60·4
1959	16·5	748,501	15,901	0·38	34·1	64·2	60·7
1960	17·2	785,005	15,819	0·39	32·8	64·7	61·3
1961	17·6	811,281	15,727	0·33	32·2	65·6	62·3
1962	18·0	838,736	15,464	0·35	30·8	65·9	62·8
1963 provisional	18·2	854,055	14,989	0·28	29·3	..	65·0 (estimated)

Table VII.1 above shows the number of live and still births and the increase in the birth rate since 1955 when the fall which occurred after the war was reversed. Despite the increased pressure of work, however, the steady fall in the perinatal mortality, i.e. stillbirths and infant deaths occurring within the first week of life per 1,000 total births has continued and in 1963 the rate was 29·3 which is the lowest ever recorded. The maternal death rate which showed a slight rise in 1962 has fallen and in 1963 was 0·28 per 1,000 total births. Table VII.1 shows the proportion of confinements in all institutions including private nursing homes and National Health Service Hospitals (including both consultant and general practitioner hospitals). Since 1959 there has been an increase in the proportion of confinements in institutions despite the increase in total births.

The increase in the births has not, however, been uniform over the whole country. An analysis of the 63 county councils including the county boroughs within their boundaries in England and Wales showed that between 1956 and 1962, 34 areas had less than a 20 per cent increase in births, 19 areas had a 20–29 per cent increase, and in 4 areas there was an increase of 30–35 per cent. Two small areas had a fall in the number of births. There was also considerable variation in the country of the institutional confinement rates varying from

91 per cent in Eastbourne to 38 per cent in Great Yarmouth. During the years 1956 to 1962, of the 63 county councils including their county boroughs, 15 showed a drop in the proportion of institutional confinements and 48 showed an increase.

Thus during the last two years the pressure on the services has been affected not only by the increase in the number of births but also by the relatively greater increase in the demand for hospital confinement.

TABLE VII.2

Year	Beds allocated		Average length of stay for all hospitals (H.I.P.E.)		Average total length of stay (antenatal and postnatal beds)	
	Consultant staffed	G.P. staffed	Antenatal	Postnatal	Consultant units	G.P. units
			Days	Days	Days	Days
1955	16,913	2,670	4·7	11·0	12·08	11·14
1956	16,723	2,911	4·6	10·4	11·70	10·87
1957	16,451	3,129	4·5	10·0	11·35	10·55
1958	16,148	3,373	4·3	9·6	11·03	10·29
1959	16,318	3,463	4·2	9·3	10·71	9·98
1960	16,444	3,685	4·1	9·0	10·34	9·49
1961	16,580	3,811	4·2	8·4	9·88	9·08
1962	16,476	3,944	..	..	9·58	8·63
1963	16,602	4,012	..	..	9·23	8·35

Table VII.2 shows the number of hospital beds which have been available since 1955. The consultant beds declined slightly until 1958. Since then they have been rising though there was a slight fall in 1962. The general practitioner beds and the total beds have been rising steadily since 1955 though less rapidly than the number of births.

The Hospital Plan based on the Cranbrook Committee's recommendation of a 70 per cent hospital confinement rate with a 10-day normal stay after delivery plus 7 antenatal beds per 1,000 total births per year, was computed on the projections made in 1960 of 818,000 live births in 1975. The original plan allowed for the net addition in the next 11 years of 6,500 new beds. The first revision in April, 1963, increased this by 1,200. Concerning the immediate future a recent review has shown that by June, 1964, an additional 382 beds will be available. A further 259 will be available by December, 1964. This gives a net addition of 641 beds in 1964. In addition a further net addition of 1,534 maternity beds are included in building schemes which will be started during 1964.

As can be seen in Table VII.3 the N.H.S. Hospital confinement rate (that is the percentage of all births occurring in N.H.S. Hospitals) has mainly been increased by gradually reducing the length of stay. The average total length of stay in consultant obstetric beds in 1963 was 9·23 but there was considerable variation within this figure ranging from the London undergraduate teaching hospitals with 11·19 days average stay for antenatal and postnatal patients to 8·16 in Birmingham Regional Hospital Board hospitals. The Hospital Inpatient Enquiry shows that the reduction has mainly been due to a shorter length of stay after delivery. Table VII.3 shows the breakdown of duration of stay after delivery according to the days of care after delivery.

TABLE VII.3

Duration of stay after delivery for N.H.S. maternity hospitals in England and Wales (H.I.P.E. data)

PERCENTAGE OF TOTAL CASES

Days of care after delivery	Booked cases		Unbooked cases		All cases	
	1958	1960	1958	1960	1958	1960
0	0·3	0·3	3·0	2·8	0·7	0·7
1	0·7	1·0	9·6	11·2	1·9	2·3
2	1·1	1·6	10·5	13·0	2·3	3·1
3	0·9	1·4	7·4	8·7	1·8	2·4
4	0·8	1·1	4·5	5·2	1·3	1·7
5	1·1	1·5	4·1	4·3	1·5	1·9
6	2·2	2·8	4·2	4·2	2·4	3·0
7	4·4	6·9	4·8	6·7	4·5	6·9
8–10	56·2	61·8	27·6	27·4	52·4	57·2
11–14	27·7	18·3	18·3	12·3	26·4	17·5
15+	4·5	3·2	6·2	4·4	4·7	3·3

In 1958 16·5 per cent of all cases were discharged home on or before the seventh day and 22 per cent in 1960. It is known that in 1955 the comparable figure was 7·3. However, the percentage discharged home on or before the seventh day rose to 28 per cent in 1961 including 7·4 per cent who were discharged on or before the second day. Among cases booked for hospital confinement, 11·6 per cent in 1958, 16·7 in 1960 and 22·7 in 1961 were discharged home within seven days while for unbooked cases the figure rose to 48·0 per cent in 1958, 55·9 per cent in 1960 and 59·9 in 1961.

Early discharge from hospital is generally agreed to mean discharge from hospital before the end of the lying in period, defined in the rules of the Central Midwives Board as not less than 10 days and not more than 28 days after the end of labour during which the continued attendance of a midwife on the mother is requisite.

In practice early discharge falls into three main groups:—

(a) Discharge of the patient as soon as she is fit to be moved, which may be only a few hours after childbirth as the admission is for delivery only. This type of scheme is in operation at Luton and was started because of the shortage of beds.

(b) Discharge 48 hours after delivery. This type of scheme is in operation in many areas including Bradford, Southend, Perivale Maternity Hospital, Middlesex, and St. Mary's Hospital, Paddington. In practice, the patient is usually discharged in less than 48 hours after delivery, but about 48 hours from the time she was admitted in labour. Although most hospitals estimate the time from the birth of the baby, the post-natal stay in hospital may be shortened by many factors, for example most mothers are discharged in the morning.

(c) Discharge about the 7th day. Few people mean this when they discuss early discharge, but it is obvious from the figures on the length of stay in hospital that it is a fairly common occurrence. In many cases there is no scheme for discharging patients on a certain day. It usually occurs quite haphazardly with no previous planning, and often depending on the bed situation in the hospital. Sometimes it is done with the co-operation of the local Health authorities, but they may not be given advance information of the patient's discharge.

The Maternity Services Emergency Committee set up by the National Birthday Trust Fund has suggested that further schemes for early discharge should be started to overcome the present shortage of maternity beds. Similarly the Gillie Report on "The Field of Work of the Family Doctor" stated that "Early discharge whether 48 hours after delivery or a few days earlier than is traditional, is acceptable if the mother has been prepared for it before delivery, if the family doctor and the local health authority are consulted in advance and if the home conditions are satisfactory: the family doctor is then willing to take over responsibility for the care of the mother and child, with the help of the local authority staff".

Very little has been published on the results of these schemes except for a report from Bradford of 2,573 mothers and babies who were discharged home within 48 hours. The results showed that there was no greater risk than to mothers delivered at home and their babies. The mothers themselves are said to favour early discharge schemes and it has not been found to affect midwife recruitment adversely. Studies undertaken by the Department suggest that it is essential that the scheme should be a planned one and a number of points can be listed as the requirements of a satisfactory scheme:—

1. Good co-operation between all sections of the maternity service. Maternity liaison committees have been found useful in initiating and keeping schemes under review.

2. The scheme should be fully explained to all concerned, including the junior house officers, with respective responsibilities clearly defined. The hospital should ensure that the general practitioner will agree to accept the medical responsibility of the mother and baby on their discharge.

3. Selection of suitable mothers, with their complete agreement, should be carried out by the consultant obstetrician as early as possible. The home circumstances should be assessed and the implications of early discharge fully explained to them. Leaflets and special booklets have been found useful. The general practitioner should be notified that the woman has been selected for possible early discharge.

4. The local health authority should make sure that in addition to satisfactory home conditions there is adequate help in the home.

5. A good record system is necessary to ensure that there is prompt and accurate transfer of information between the patient's attendants concerning her condition. Co-operation cards have been found useful but additional forms for home investigation and final discharge have also been found necessary.

6. The organisation of the work in the maternity unit has an important bearing on the ability of the staff to carry the load. Midwives should be relieved of all non-nursing duties. A central labour suite, separate postnatal accommodation for early discharge cases, and good clerical help have been found to bring about smooth working in the unit. Attention needs to be given to the training requirements of the pupil midwives.
7. The final selection for early discharge should be the responsibility of the obstetrician and paediatrician. The local authority and the patient's doctor should be informed of the final decision. Immediate re-admission should be accepted without question if anything goes wrong.
8. An efficient ambulance service with well heated ambulances in the winter is important for transfer of the patient home. A nurse-escort is able to make sure that the home has been prepared for the arrival of the mother and baby.
9. The administration and staffing of the local health authority midwifery service has an important bearing on the work pressure, as the post natal care is taken over by domiciliary midwives or, where there is a heavy early discharge rate, help can be given by home nurses who are qualified as midwives. The work is particularly suitable for part-time staff.
10. There should be good medical follow-up to ensure that the mother and baby have not been affected by the early discharge and that the scheme is working satisfactorily. The results obtained should be reviewed from time to time.

In order to make the best use of the available maternity beds it is necessary to select patients so that those who most need it are able to be confined in hospital. Some indication of the extent to which patients are selected can be gained from an analysis of the age and parity of patients admitted for institutional confinement.

TABLE VII.4

Births, including stillbirths, which occurred (together with their percentage distribution) in England and Wales in 1962

Age group	Total		Number of previous Liveborn Children*					
			0		1–3		4+	
	Institution	Home	Institution	Home	Institution	Home	Institution	Home
All ages	563,148 (65·93)	291,052 (34·07)	291,131 (83·73)	56,570 (16·27)	231,309 (52·85)	206,401 (47·15)	40,708 (59·18)	28,081 (40·82)
Under 25	236,344 (70·97)	96,675 (29·03)	174,142 (82·70)	36,431 (17·30)	61,064 (50·73)	59,298 (49·27)	1,138 (54·61)	946 (45·39)
25–34	255,111 (61·13)	162,226 (38·87)	101,583 (84·88)	18,096 (15·12)	133,108 (51·11)	127,332 (48·89)	20,420 (54·87)	16,798 (45·13)
35 and over ..	71,341 (69·11)	31,891 (30·89)	15,130 (88·98)	1,874 (11·02)	37,080 (65·31)	19,692 (34·69)	19,131 (64·95)	10,325 (35·05)
Not stated	352 (57·52)	260 (42·48)	276 (62·02)	169 (37·98)	57 (41·91)	79 (58·09)	19 (61·29)	12 (38·71)

* Parity, in this instance, excludes previous abortions and stillbirths.

It can be seen that 84 per cent of primigravidae were delivered in institutions but only 59 per cent of women expecting their fifth or more children, and 69 per cent of those over the age of 35 years. The corresponding figures for 1961 were 84 per cent primigravidae, 56 per cent of grandmultiparae, and 67 per cent of those over the age of 35 years which shows a slightly better selection in 1962.

The extent to which beds can be used does however ultimately depend upon the number of available staff.

Table VII.5 shows the number of hospital medical staff in terms—whole-time equivalents specialising in gynaecology and obstetrics. Figures are not available on House Officer staff by speciality. These statistics are based on hospital boards' returns and show the position in recent years. They do not of course, reflect in any way the proposals which the Boards have made in their reviews of hospital medical staffing which are under discussion between the department and the profession. It will be remembered that most of the increase in N.H.S. hospital confinements has been in beds under the care of general practitioners, so that medical staff increases have more than kept pace with the increase in confinements in consultant departments.

TABLE VII.5

Hospital medical staff specialising in gynaecology and obstetrics

Grade	Whole-time equivalents								
	1955	1956	1957	1958	1959	1960	1961	1962	1963
Consultant	317·8	322·6	325·3	340·5	334·2	339·8	354·6	353·6	364·1
S.H.M.O.	47·6	45·1	41·3	39·7	35·8	32·3	30·8	30·1	29·5
Senior Registrar	75·7	72·8	73·2	70·1	68·2	66·5	62·9	60·9	59·0
Registrar	207·9	220·4	228·4	239·0	238·7	250·6	267·9	280·6	297·6
J.H.M.O.	14·2	9·2	7·7	7·2	13·2	15·0	17·0	14·0	18·0
S.H.O.	181·3	187·3	220·6	214·9	251·5	271·3	276·4	293·8	287·2
G.Ps (Section 10b)	181·3	187·3	220·6	214·9	251·5	271·3	49·2	49·3	53·3

Since 1957 there has been a steady increase in the number of trained hospital midwives and the total number (whole-time and part-time) now stands at the highest level recorded so far, as can be seen in Table VII.6. As there has been a reduction in hours of work, the position is less favourable than for medical staff. The number of whole-time midwifery staff employed in the hospital service at 30th September, 1963 rose by 8 per cent over the previous year. Pupil midwives fell by nearly 5 per cent but the number still stands at a level higher than at any time before 1960: it was expected that the introduction of the obstetric nurse training might reduce the number of pupil midwives but it is hoped that the number who go on to practice after qualifying will be as high or even higher. In the domiciliary field the increase in the years 1959–1963 was considerably greater than the increase in the domiciliary births but the work in connection with early discharge increased.

TABLE VII.6

	Midwives in Hospital Service*			Domiciliary midwives†
	Whole-time	Part-time	Pupils	Whole-time equivalents
1955	5,362	1,286	3,710	4,669
1956	5,324	1,327	3,559	4,657
1957	5,194	1,367	3,805	4,697
1958	5,289	1,402	3,889	4,759
1959	5,489	1,453	4,418	4,819
1960	5,693	1,528	4,647	4,896
1961	5,896	1,709	4,640	5,018
1962	6,023	1,954	4,825	5,185
1963	6,511	2,092	4,603	5,303

* This figure includes some midwives who are employed by the hospital for work on the district.

† Administrative staff are not included in these figures.

No assessment of the amount of work carried out in maternity services would be complete without some mention of the ante-natal outpatient care which has been increasing very much during the last few years as can be seen in Table VII.7.

TABLE VII.7

	Total attendances at Hospital Ante-natal Clinics	Total attendances at L.H.A. Clinics
	thousand	thousand
1955	2,282·9	1,388·2
1956	2,395·9	1,424·1
1957	2,504·9	1,453·9
1958	2,563·6	1,507·0
1959	2,610·7	1,515·6
1960	2,746·0	1,577·1
1961	2,868·3	1,604·0
1962	2,935·8	1,583·4
1963	3,061·5	..

The hospital ante-natal attendances for 1962 show a 29 per cent increase over the 1955 figure and the total attendances at L.H.A. clinics a 14 per cent rise. In addition general practitioners provide ante-natal care in their own surgeries and there is every reason to believe this work has increased both in total and per patient. Many obstetricians refer patients to their own doctors for interim ante-natal care, which relieves pressure in crowded ante-natal clinics. Although the exact extent to which this is being done is not known the total amount of maternity work done by general practitioners has been increasing and during 1963 payment was made for complete maternity services in 350,600 cases and part services in a further 334,900 cases including miscarriages. Of the complete services 6,808 were given by doctors not on the obstetric list.

During 1963 two special measures were taken to try and ensure that the best use was made of the available resources pending the implementation of the hospital plan.

In London special local committees were set up to define catchment areas and to ensure that mothers who need a hospital bed for medical or social reasons were booked early in pregnancy. It was hoped that this would result in the Emergency Bed Service having only to deal with cases which are true emergencies. It is unlikely that these areas however, will become fully operative until 1964.

For the rest of the country Maternity Liaison Committees were asked to meet to discuss the problems.

These Committees were originally set up following the Cranbrook Report, although there were some already functioning in some parts of the country. The Liaison Committees consist of professional representatives of the hospital, local health authority and general practitioner.

A conference of representatives from fifteen Maternity Liaison Committees in Sheffield Regional Hospital Area held in November, 1963, confirmed the value of liaison committees which make all concerned aware of each other's problems and give the opportunity of formulating an agreed plan for the area. In December, 1963, the maternity liaison committees were asked to review the maternity services in the light of local circumstances, in particular to meet the expected seasonal increase in births in the early part of this year. It was suggested that the following should be fully discussed.

(i) monthly number of births expected;

(ii) methods by which difficulties can be overcome, for example by diverting hospital accommodation from other uses for ante-natal, delivery, or post-natal purposes; and

(iii) the possibility of discharging selected mothers and babies from hospital early in the puerperium.

In addition following discussion with the Central Midwives Board a meeting has been convened early in 1964 with representatives of the Royal College of Obstetricians and Gynaecologists, the British Medical Association, the College of General Practitioners, the Society of Medical Officers of Health, the British Paediatric Association, the Central Midwives Board and the Royal College of Midwives. At this meeting the general maternity position was to be discussed and methods by which the best use could be made of the available maternity beds pending the implementation of the Hospital Plan.

The Chief Nursing Officer also arranged a one day conference early in 1964 with matrons of maternity hospitals and superintendent midwives of maternity units on "making the best use of midwifery resources."

Emergency Bed Service Maternity Admissions

The Emergency Bed Service is concerned solely with Greater London. In 1958 the Service, in its Annual Report, drew attention to the steady rise in the number of women in labour for whom it was asked to find a maternity bed. The majority of these patients needed admission to hospital for social and not medical reasons, and in most cases this fact was known well in advance of the confinement.

In 1958, 1,699 or 1·88 per cent of admissions to maternity units in the area were arranged through the Emergency Bed Service. In 1962, they rose to 4,014 or 3·89 per cent, and in March, 1963, the Service was requested to find maternity beds for 504 women in labour—the highest figure ever recorded in one month.

The hospital confinement rate for London is over 80 per cent—amongst the highest in the country—and for Middlesex about 75 per cent, and with the additional beds to be provided shortly there should be sufficient hospital maternity accommodation to meet the needs of the area. There is, however, an uneven distribution of the maternity beds in the London area and it is this which causes acute local problems.

During the year Metropolitan Regional Hospital Boards were asked to set up bodies representative of the hospital authorities, local health authorities, Executive Councils and Local Medical Committees, to co-ordinate administrative and executive action so that groups of maternity beds could be assigned to defined areas. These bodies will be responsible for ensuring that the maternity beds serving the area meet the needs both for ante-natal treatment and confinement.

It is expected that the establishment of the necessary machinery will take a little time; but once set up, it was to be the responsibility of the hospital to which any expectant mother from the area served by its group applied, or was referred, first to satisfy itself whether hospital delivery was indicated on medical or social grounds (the decision whether to admit on social grounds being based on an assessment by the local health authority in whose area the woman lives, who would assess the priority in accordance with area needs) and, if so, make a firm booking or arrange it for her with another hospital. If a hospital confinement was not necessary the doctor or the clinic responsible for ante-natal care would be informed by the hospital. It would be the responsibility of the local health authority or general practitioner to verify in the case of every woman for whom they were providing ante-natal care, that firm arrangements had been made for the confinement and that they were known to her.

Report on the Confidential Enquiries into Maternal Deaths for England and Wales, 1958–1960

The third report was published in 1963 and covers the years 1958–60. It is a direct continuation of previous reports, the first of which related to the years 1952–54 and the second to 1955–57. The aim of the Enquiry continued to be the analysis of the cause of all maternal deaths, and the ascertainment on the basis of information obtained from those concerned, whether things were done or left undone which seemed to have contributed to the fatal outcome. Factors which, in the light of best current practice, could be regarded as avoidable were recorded. The avoidable factor or factors were not necessarily the cause of the maternal death, but had they been recognised or anticipated and handled differently, the death might not have occurred.

During the years 1958 to 1960, 2,322,229 births were registered and 928 women died from causes ascribed to pregnancy or childbirth. Confidential reports were obtained on 742 of the deaths. In 315, or 42·5 per cent of the 742 deaths, avoidable factors were present. 254 of the 742 deaths were associated with, but not directly due to pregnancy or childbirth, and amongst these 45 or 17·7 per cent had avoidable factors.

The major causes of maternal deaths continued to be toxaemia, haemorrhage, abortion and pulmonary embolus. The number of deaths in each of these groups, and notably those associated with toxaemia, had diminished since the previous Report. Toxaemia, nevertheless, remained the largest single cause of death due to childbirth, and inadequate ante-natal care was by far the most serious, and most frequent avoidable factor in this group.

The remarkable fall in the number of deaths from haemorrhage which was noted in the 1955–57 Report was maintained, although in over half an avoidable factor occurred; an important one being the wrong booking of grand multiparae, older women, and women with a previous history of post partum haemorrhage for confinements at home or in maternity homes. Deaths from haemorrhage might also have been prevented had greater use been made of the flying squad service.

Only slight improvement in the number of deaths from abortion occurred, and in a high proportion there was evidence that the abortion was procured either by the woman herself or by some other person.

Deaths ascribed to pulmonary embolism showed negligible improvement. This is not surprising, but the deaths were carefully analysed to discover whether some significant cause could be found, but the results were disappointing. During 1963 a more meticulous investigation of maternal deaths from this cause was begun, and an additional confidential enquiry form devised for the purpose.

A section, not included in previous reports, dealt with the making of arrangements for a forthcoming confinement. In all three Reports an outstanding factor which was considered avoidable was that women who were potentially "at risk" for the delivery insisted, or were allowed to have their babies at home or in maternity homes which lacked the resources of a consultant unit. The Report stressed that it is desirable that a woman should only be booked for home confinement after the most careful assessment of the normality of her present health, and past medical history, and in the knowledge that her home conditions are suitable. It is also suggested that arrangements for a home or a maternity home confinement should not be contemplated unless the doctor and midwife are prepared to accept responsibility for ante-natal care, care in labour and care after delivery.

The purpose of the enquiry continues to be an attempt to discover ways and means by which the already high level of safety in childbirth can be further enhanced and the Reports make plain that there could be further improvement by the steady application of the accepted principles of best current practice. An abridged version of the Report has been prepared and is under consideration by the Standing Maternity and Midwifery Advisory Committee of the Central Health Services Council. It is intended for distribution to doctors and midwives who lack the time to study the full Report but are concerned in the practice of obstetrics.

Perinatal Mortality

Perinatal mortality made up of stillbirths and first week deaths is the best measure we have of the standard of maternal care. It is satisfactory to record that the perinatal mortality rate has now reached a new low level of 29·3 per

1,000 total births which reflects credit on the obstetricians, general practitioners and hospital and domiciliary midwives who undertook the antenatal care and delivery of some 860,000 pregnant women in 1963. Nevertheless there is still room for substantial improvement, and a greater saving of infant life could be achieved by reducing the rates for the country as a whole to the level, for example, of the present rates for London and South Eastern Region.

Significance of perinatal mortality

The 25,487 deaths in the perinatal period account for 77 per cent of all loss of infant lives from the 28th week of pregnancy to the end of the first year of life although they are only 3 per cent of all births. They may be divided into those associated with obstetric conditions in the mother which can be reduced by good antenatal care and skilful management of labour and those related to genetic disorders and the effects of hostile influences on the foetus or neonate such as infection, drug intoxication, radiation, hormonal imbalance, etc. The hard core of perinatal mortality is made up of prematurity, asphyxia and atelectasis, birth injury, congenital malformations and haemolytic disease of the newborn. An important accompaniment to the concentration of loss of infant lives in the perinatal period is the association of morbidity in the survivors. As a result of the changed pattern of morbidity in childhood, hospital and community care of the sick child is increasingly devoted to conditions and defects having their origins in the perinatal period.

Studies in perinatal mortality

Various studies have shown that perinatal mortality has a marked regional variation, being highest in South East Wales and lowest in London and the South Eastern Region, and is influenced by maternal age and parity. Heady *et al.* (1955) showed that perinatal mortality was lowest amongst infants of mothers having their second child at the age of 25 to 29 years and highest in elderly multiparae. The patient's previous obstetric history, multiple pregnancy and social class also affect perinatal loss. The Report of the National Birthday Trust Fund (Butler and Bonham, 1963) was published during the year. Medical and sociological data were reviewed on 16,994 single births in Great Britain in one week, 3rd–9th March, 1958, and also on 7,117 stillbirths and neonatal deaths in the three months March–May of that year. Although much of the report was a confirmation of the findings of other studies its particular value was to draw attention again to the importance of scrupulously careful antenatal supervision and the specialist care needed by the high risk groups amongst expectant mothers whose infants have a greater than normal chance of death in the perinatal period. Perinatal mortality was generally higher in the north and west and lower in the south and east. An increasing perinatal death rate with rising maternal age after 30 years was demonstrated. Second babies were shown to have a perinatal mortality below average—third babies were at average risk, first babies were significantly higher than average, and from the fourth baby the risk rose steadily.

Perinatal mortality in Social Class I was only half that in Social Class V. The safest social class parity group was the second child of the wife of a professional man and the least safe was the fifth or subsequent baby of the wife of the unskilled worker. It is suggested in the report that the high proportion of first births especially to older women might be expected to increase the perinatal death rates of the upper social groups, while very early childbearing and the greater frequency of high parity births would tend to raise the mortality of the lower social groups. Standardisation for age and parity left the class differential virtually unchanged and had been shown in previous studies.

The important bearing of the mother's past obstetric history on the outcome to the baby was demonstrated. This includes previous abortions, premature births, previous stillbirths and neonatal deaths, and a past history of toxaemia, antepartum haemorrhage or caesarean section. Unfortunately a high proportion of women known to be at risk in this series in 1958 did not have the advantage of specialist care. Less than 30 per cent of women having their fifth or subsequent baby were booked and delivered in hospital despite the marked increase in the risk of perinatal death. There was evidence of poor initial selection of cases for the place of confinement. Almost one in four women expecting first babies and booked for home deliveries became emergency admissions to hospital later in pregnancy or during labour. The perinatal mortality rates for infants of mothers booked for home or general practitioner units but transferred to consultant units in late pregnancy or during labour were three times the national average, presumably because the transfer was due to some abnormality or prematurity.

Antenatal care was too often deficient and women of high parity did not seek antenatal care until late in pregnancy. One-third of all women had no haemoglobin test recorded in pregnancy and one woman in six did not have her blood pressure taken at each visit. Of women with a diastolic blood pressure of 100 mm or more only half were admitted to hospital for treatment before labour. In over 5 per cent of women the blood Rhesus type was not known and not tested during pregnancy. Further, one-third of all perinatal deaths of the babies of Rh-negative high parity women were due to blood group incompatibility yet one mother in nine of high parity was delivered without knowledge of her Rh type. The maturity of the foetus was of immense importance to the outcome. Delivery at 40 weeks carried a perinatal mortality that was two-fifths of the national average and even slight variation from the normal term have greater risks, 50 per cent at 42 weeks and nearly 100 per cent at 38 weeks or 43 weeks. Before 38 weeks only 9·4 per cent of deliveries had occurred but 46·2 per cent of perinatal deaths had already taken place. It is of interest when considering birth weight that one-third of premature babies (2,500 grams or less) were born at 38 weeks or later. New categories of high perinatal risk indicated by birthweight and gestation were shown among babies weighing from 5½ to 6 lbs delivered before 36 weeks and those where the birthweight was lower than expected in relation to the gestation period.

One mother in six having her first baby was in labour for more than twenty-four hours and in this group the infant risk was 20 per cent greater. Very short labours were associated with a higher risk than average in all parities. The report states that the results of a preliminary analysis of duration of labour clearly indicates the need for more elaborate study but suggested the following conclusions:—

(1) More research is needed into the risks of short labour.

(2) Primigravidae and multiparae with first stages of 24 hours or more are best transferred to hospital.

(3) **In primigravidae and multiparae with second stages of 120 or 60 minutes,** respectively, immediate delivery is advisable.

(4) If the membranes have been ruptured for 24 hours transfer to hospital is advisable.

The results in breech delivery were poor and breech delivery in multiparae carried a higher mortality in this series than in primiparae irrespective of weight. Caesarean section was performed in 2·7 per cent of deliveries and the resultant mortality in the infants was 7·2 per cent. Just less than half of sections were done prior to labour either electively or for severe maternal conditions such as toxaemia or antenatal haemorrhage. The perinatal mortality was 50 per cent higher in these patients than in those for whom the operation was done during labour; a point which may relate to the selection of worse cases for earlier section. Forceps delivery was used for 4·7 per cent of all mothers but for 10·5 per cent of mothers of first babies. The mortality amongst first born infants in this group was no different from the national average but those of multiparae had a higher overall mortality.

The survey pointed out the need for greater attention to the care of the infant during the intranatal and immediate postnatal period, the early diagnosis of foetal distress and for prompt and efficient resuscitative measures. A special post-mortem examination was carried out on 93 per cent of perinatal deaths occurring in March, 1958. The commonest findings was intrapartum anoxia, which accounted for 22·9 per cent of the perinatal deaths. This group may present the greatest opportunity for preventive action since many were born after 38 weeks' gestation, 60 per cent weighed more than 5½ lbs, and most of them were otherwise normal. One in eight of them was born alive but failed to respond to resuscitation. Congenital malformations were found in 19 per cent of cases, two-thirds of which involved the central nervous system. Antepartum anoxia was responsible for 11·2 per cent and antepartum foetal death with no lesion, 10·9 per cent. Hyaline membrane, neonatal death with no histological lesion, and intraventricular haemorrhage together caused 9·6 per cent of the deaths. Cerebral birth trauma alone or combined with intrapartum asphyxia was present in 10 per cent of cases. Other important findings were pneumonia, which was only diagnosed in early neonatal deaths and constituted 4·8 per cent of all perinatal deaths, and isoimmunisation, contributing to 4·3 per cent of the cases.

The assessment of avoidability of perinatal death proved to be too difficult to undertake but the authors point out that lapses in care, particularly in the management of toxaemia and intrapartum anoxia, suggested that with the continuing improvement of standards many more lives may yet be saved.

Prematurity

Prematurity is the dominant factor in perinatal mortality. Some 60 per cent of first week deaths occur in premature infants and 50 per cent of 14,989 stillbirths notified in 1963 were premature.

The returns from local health authorities (Tables VII.8 and VII.9) show that in 1963 7·7 per cent of notified births were premature. In the weight group distribution 11 per cent of the live premature infants fall into the category of 3 lbs 4 oz or less. Table VII·9 demonstrates that the first day of life is the most dangerous period for the premature infant, especially those in the lowest weight group; nearly half the infants weighing 3 lbs 4 oz or less died within twenty-four hours of birth, compared with only 1·5 per cent in the highest weight group. Some 2,000 infants whose birth weights are 3 lbs 4 oz or less survived the neonatal period in 1963. Recently much attention has been paid to the subsequent growth and development of babies of very low birth weight. Drillien (1964) followed up 110 infants, 3 lbs or less at birth, discharged from three maternity hospitals between 1948 and 1960. The educational record of 72 children in the survey who passed the age of 5 years is known. Over one-third of the group are likely to be unsuitable for normal school by reason of physical or mental handicap. Over one-third are dull children who will probably be retained in a normal school but will require special educational treatment, and less than one-third are low average or above average in ability. There was an increased incidence of severe mental handicap in those born in 1953 and 1954 as compared with those born in other years between 1948-50. In searching for an explanation Drillien found that the practice of delayed feeding was a vogue in 1953 and 1954 when few of the infants received any fluid until the third or fourth days of life with milk feeding delayed until the fifth to ninth day. She points out that it is not unreasonable to suppose that quite extreme degrees of dehydration observed in some of the infants born in the years 1953 and 1954 might have resulted in impairment to the cerebral circulation and a degree of damage sufficient to cause some adverse effect on later function.

TABLE VII.8

Wastage of infant life associated with premature birth—analysis by birth weight groups—1963

Birth Weight Groups	Premature live births	Deaths within 24 hours of birth	Deaths within 28 days of birth	Deaths within 28 days per 1,000 live premature births	Premature still births	Premature still births per 1,000 live and still premature births
All babies of 5lb 8oz or less	56,172	4,473	7,196	128	8,486	131
—2lb 3oz „ „	2,319	1,546	1,974	851	1,549	400
—3lb 4oz „ „	4,031	1,267	1,999	496	2,358	369
—4lb 6oz „ „	10,160	912	1,649	162	2,343	187
—4lb 15oz „ „	11,917	359	719	60	949	74
—5lb 8oz „ „	27,745	389	855	31	1,287	44

TABLE VII.9

Wastage of infant life associated with premature births—analysis by place of birth—1963

Place of birth	Premature live births	Deaths within 24 hours of birth	Deaths within 28 days of birth	Deaths within 28 days per 1,000 live premature births	Premature still births	Premature still births per 1,000 live and still premature births
TOTAL	56,172	4,473	7,196	128	8,486	131
Born in hospital	45,717	4,005	6,381	140	7,637	143
Born and nursed entirely at home or in a nursing home	8,120	218	332	41	849	95
Born at home or in a nursing home and transferred to hospital on or before the 28th day	2,335	250	483	207	..	..

Another piece of work which also draws attention to the importance of expert postnatal management of the premature infant is that of McDonald (1963). She followed up with the co-operation of medical officers of health 1,081 children weighing not more than 4 lbs at birth; 70 of them developed cerebral palsy; of these 57 were included in the syndrome of spastic diplegia, 5 had choreoathetoid cerebral palsy, three had spastic double hemiplegia and two had typical spastic hemiplegia. The distribution differed from that found in all cerebral palsy children. It was found that cyanotic attacks in the early neonatal period were associated with diplegia and the suggestion was that they might have been the cause of the condition or closely associated with it. There was some indication that prolonged oxygen therapy prevented diplegia in very immature infants with cyanotic attacks. It is suggested that this treatment might be of value if retrolental fibroplasia could be prevented.

Atelectasis and postnatal asphyxia and birth injury

Atelectasis and postnatal asphyxia caused some 2,434 deaths during the first week of life. This cause of death has remained more or less constant at a rate of 3·3 per 1,000 live births during the decade. Apgar (1953) has drawn attention to five objective signs which can be noted one minute after the birth of the infant and which give an indication of the need for immediate resuscitative measures. They are heart rate, respiratory effort, muscle tone, response to catheter in nostril, and colour. A "score" of 10 indicates an infant is in the best possible condition. Lightwood and Brimblecombe (1963) points out that an objective examination of this kind carried out routinely should ensure that there is no delay in initiating active resuscitation of an asphyxiated infant. Birth injuries have shown a decline in the last decade but they still acount for some 1,800 deaths in the first week.

Congenital malformations

Congenital malformations have become one of the larger causes of mortality and morbidity in the infant as conditions more amenable to treatment have declined in significance. They now account for 20 per cent of all infant deaths and occur in 20 per cent of stillbirths. There are 1,576 first-week deaths due to congenital malformations, many of which affect the central nervous system. In a recent study of about 57,000 live and stillborn Birmingham infants (McKeown and Record, 1960) 2·3 per cent were malformed. The commonest specific malformations found were anencephalus (2·0 per 1,000), spina bifida (3·0), hydrocephalus (2·6), mongolism (1·7), cardiac malformations (4·2), cleft lip or palate (1·9), and talipes (4·4).

There is a sex difference which makes cleft lip commoner in males while anencephalus, spina bifida, cleft palate, patent ductus arteriosus, and congenital dislocation of the hip are more common in females. There is evidence of geographical variation in the incidence of several malformations and at least two (anencephalus and congenital dislocation of the hip) show marked seasonal fluctuation. The National Birthday Trust Fund Enquiry (Butler and Bonham, 1963) showed considerable regional variation in the incidence of fatal malformations which caused the mortality rate from this cause to range from 3·5 per 1,000 in East Anglia to 7·8 per 1,000 in the South Western Region. The aetiology of congenital malformations is obscure. In general they reflect the genetic and social background of the mother rather than her obstetric care. Some are known to be due to chromosomal abnormalities, others to hostile environmental influences acting on the embryo in early pregnancy. There is need for more information about the epidemiology of these conditions and in this connection the notification of congenital malformation is a useful step (*see* page 101). Congenital malformations are perhaps the most challenging of all causes of perinatal mortality and morbidity. Prevention is complicated by complex genetic situations and the difficulty of distinguishing between hereditary and environmental causes. The recent advances in paediatric surgery hold out a new hope, especially in deformities of the heart, meningo-myelocoeles, gastro-intestinal and genito-urinary tracts. Survival may often depend on the prompt recognition of the need for surgical intervention.

Haemolytic disease of the newborn

This disease, due to Rhesus or other blood group difference in mother and baby, accounted for 342 deaths in 1963, giving an infant mortality rate of 0·4 per 1,000 live births. It is estimated also that 400–500 affected stillbirths occur each year. An infant mortality rate of no more than 0·2 per 1,000 is thought to be a possible achievement by antenatal prediction of the condition, awareness that jaundice in the first twenty-four hours of life is strongly suggestive of the disease, and prompt treatment by exchange transfusion in a special centre. Haemolytic disease of the newborn is another disease which may have unfortunate consequences involving cerebral damage if not properly treated in the immediate postnatal period, again illustrating the importance and far-reaching consequences of management of the perinatal period.

Discussion

As said at the outset, perinatal mortality is an index of the quality of maternal care and the performance of the maternity services. Good antenatal care is a basic requirement. The publicity given to this in connection with toxaemia of pregnancy—a major problem—over the past years had begun to show results; the perinatal mortality rate, which was 35·0 per 1,000 in the year of the National Birthday Trust Survey, is now down to 29 per 1,000. It is encouraging that women increasingly realise that they should seek antenatal care early in pregnancy, have blood specimens taken and have blood pressure and weight recorded regularly. It is also fundamental that "high risk" groups of mothers whose infants have a greater risk of perinatal death should be provided with expert care in a consultant unit where all medical resources are readily available. The importance of this is shown by the now well known Bradford scheme where in 1958 in which consultant obstetricians, general practitioners, hospital and domiciliary midwives first collaborated to bring under control toxaemia of pregnancy and the complication of eclampsia. Because of the shortage of antenatal beds it was decided to provide additional beds of this type by reducing the lying-in beds and discharging selected women home within 48 hours of delivery. The fall in perinatal mortality from 38 per 1,000 in 1948 to the present level of 29 per 1,000 in Bradford is impressive.

Despite the constant publicity given to good selection for hospital confinement it is discouraging to report that in 1962, the latest figures available, the selection was not satisfactory. Table VII.4 gives details of births by age group and parity according to place of confinement in 1962. It can be seen that 66 per cent of women had their babies in hospital which included 84 per cent of women having their first babies but only 59 per cent having their fifth or later children. Thirty-five per cent of women in the highest risk group, namely grand multiparae, aged over 35 were, unfortunately, confined at home. These tables are available for each County Borough and County Council area and are a valuable check on the selection of cases for hospital in the area and maternity liaison committees may find this information particularly useful.

Evidence has been quoted to show the need for greater attention to the care, including resuscitation techniques, of the newborn infant, not only the premature infant but also those who are post-mature, presenting by breech, or infants of toxaemic mothers. The close working of obstetrician and paediatrician is of special importance. No consideration of perinatal mortality is possible without recognition of the broad preventive aspects with their social and economic as well as medical implications and the inevitable residual morbidity in survivors. It is generally recognised that the prevention of prematurity, and schemes for the better care of the low-weight baby, are among the most fruitful to follow, since some 60 per cent of first-week deaths occur in premature infants. Congenital malformations are a difficult problem of which mortality is only part. The voluntary notification of congenital malformation and the compiling of a register of infants considered to be at risk of handicapping conditions by reason of unfavourable family history or adverse environmental influences in the infant's prenatal, perinatal and postnatal life all are recently introduced administrative measures. They have been adopted to help deal with the aftermath of conditions having their origins in the antenatal and perinatal period and with whose care the hospital and family doctors are increasingly concerned.

Notifications of Congenital Abnormalities

Until comparatively recently little was known concerning the causation of congenital malformations, but the discovery of the effects of radiation, infections such as rubella and drugs such as thalidomide have radically changed the outlook on these occurrences. The thalidomide incident focussed attention on lack of information concerning the incidence of the different types of congenital malformations both nationally and regionally, other than through mortality statistics. Studies have been carried out in centres such as Birmingham and Liverpool for a number of years and it was through the excellent work done in these centres that an estimate of the frequency of pre-natal injury by thalidomide was first made in this country. Had a national scheme for notification been available at the time, it is probable that the increase in limb deformities would have been noticed earlier and perhaps some of these tragedies could have been averted. Once the possibility of teratogenic effects of drugs had been appreciated, some form of notification became urgent. During 1963 a scheme was devised for notification of congenital malformations to the medical officer of health with the object of enabling a central statistical record to be compiled by the General Register Office. This scheme came into force from the beginning of 1964. It is voluntarily undertaken by doctors and midwives and is confined to abnormalities which are observable at birth. The doctor or midwife who fills in the notification of birth form which goes to the medical officer of health is asked to state whether any abnormality was apparent at birth. The Medical

Officer of Health in whose area the child resides then makes such enquiries as he thinks necessary of the family doctor and hospital to give a precise diagnosis and completes a special form provided by the General Register Office on which the details of all malformations whether single or multiple can be recorded. It is intended to publish statistics, probably quarterly, showing the national and regional figures. These statistics should reveal both trends in the incidence of the disease and geographical variations. Centres such as Birmingham, Liverpool, Cardiff and Bristol, which already collect detailed information, will be asked to continue their special studies so that more detailed information is available if the total figures or those for any particular abnormality show a rise.

The national scheme will be limited to malformations observable at birth which automatically excludes the majority of defects of the heart, eyes, ears, as well as mental subnormality. The age at which these conditions become recognisable varies and some indeed may not be diagnosed until adult life. In order to provide national statistics it is necessary to make the figures over the country and over the years reasonably comparable and this can best be achieved by limiting the scheme to abnormalities which are recognisable within a particular period of the child's life. The longer the period is from birth the more likely is the pattern of reporting in different areas to be uneven and interpretation difficult.

Similarly, the national scheme is limited to the collection and publication of statistics. It is likely that there may be somewhere about 20,000 children with detectable abnormalities at birth occurring every year. Many of these may be minor and unlikely to handicap the child in any way. If a nominal register kept centrally was to be of value it would need to be kept up-to-date with the addition of children with conditions as they are diagnosed and the detection of those where the defect has been corrected, e.g. removal of extra digits.

These objections can best be dealt with in local registers. The information about individual cases of congenital malformations observed at birth collected for central statistical purposes will also enable medical officers of health to maintain local nominal registers of all children residing within their areas who suffer from congenital defects. The register can be kept constantly alive by additions and deletions and can be used to follow-up the children to ensure that they receive all necessary care and treatment. This register can be maintained in conjunction with the "at risk" register which includes all children "at risk" of handicapping conditions. Like other children "at risk" those with congenital malformations will need careful supervision to ensure that other defects such as congenital heart disease and congenital deafness are detected as early as possible.

Acute Rheumatism

Mortality

The total number of deaths classified by the Registrar General as due to rheumatic fever in 1963 was 97. Comparable figures from 1954 onwards are given in the table. Of the 97 deaths in 1963, 17 occurred under 15 years of age compared with 19 in 1962.

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Males ..	152	103	102	78	70	63	61	56	62	52
Females	147	114	106	96	61	63	64	47	44	45
	299	217	208	174	131	126	125	103	106	97

Notification

Under the Acute Rheumatism (Amendment) Regulations, 1959 (S.I.1959 No. 213) acute rheumatism in children under the age of 16 years is notifiable in the areas of local health authorities listed.

Notification Areas	Registrar General's Estimate of Child Population 0–14 June, 1963	Total Notified Cases	Acute Rheumatism	Recurrences	Not Rheumatism
Cornwall C.C.	70,800	1	1	..	..
Lancashire C.C. ..	532,800	20	17	1	2
Lincolnshire C.C. (Parts of Lindsey)..	83,100	3	3	..	..
Bristol C.B.	94,500	14	9	..	5
Cardiff C.B.	65,200	3	3	..	..
Grimsby C.B.	25,100	4	2	1	1
Kingston upon Hull C.B.	77,900	4	3	..	1
Lincoln C.B.	17,900	1	1	..	..
Manchester C.B. ..	155,800	6	6	..	..
Newcastle upon Tyne C.B.	60,300	3	3	..	..
Salford C.B.	36,500	4	4	..	..
Sheffield C.B.	101,900	9	7	..	2
	1,321,800	72	59	2	11

The number of cases of acute rheumatism including two recurrences notified in 12 areas during 1963 was 61 or about 0·5 cases per 10,000 children under 15 years. This compares with 87 cases including 2 recurrences representing about 0·7 cases per 10,000 children under 15 years in 1962.

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VIII

ENVIRONMENTAL HYGIENE

Clean Air

Smoke control programmes

In a statement to Parliament on 24th May the Minister of Housing and Local Government said that technological advances in the gas industry had made it necessary to undertake a review of arrangements under the Clean Air Act, 1956. The results of this review were published by his Ministry in a circular and White Paper issued by the Ministry of Power on 17th December. It was apparent that while supplies of premium smokeless fuels and gas coke suitable for burning on open grates are sufficient for existing smoke control areas, supplies in some parts of the country would not be sufficient for further areas. For economic and other reasons an increasing proportion of gas is being used from sources other than the carbonisation of coal. Smoke control areas must therefore plan to make greater use of other forms of smokeless heating, including the use of more hard coke which is suitable for use in domestic boilers and in the closed and openable types of stove.

While restricted supplies of premium smokeless fuels may make it more difficult for local authorities to establish further smoke control areas it is important that members of authorities and the public as a whole should be left in no doubt as to the importance and benefits of smoke control. Bronchitis, the disease so prevalent in Britain is in large measure associated with the breathing of tobacco fumes and smoke polluted air. The presence of substances in coal smoke which are known to be carcinogenic suggests that air pollution may play a part also in causing the excess of urban over rural deaths from cancer of the lung, although the smoking of cigarettes is beyond doubt the main factor in the incidence of this disease. In addition to the importance of air pollution in contributing to the increased incidence of disease, the immediate effect of raised levels of pollution on health must not be overlooked. On the not infrequent winter days when meteorological conditions prevent the upward dispersion of polluted air and when levels of urban pollution in consequence show a marked rise, the numbers of serious illnesses and the numbers of deaths from respiratory and cardiac diseases show a pronounced rise. The control of air pollution is today undoubtedly one of the most important public health measures in the hands of a local authority.

Changes in fuel consumption

Changes in the nation's domestic habits are reflected in the changing pattern of fuel consumption. This provides a valuable assistance to the Clean Air programme and is most obvious in the southern areas of England and particularly in the London region. Increasing numbers of families are showing a preference for smokeless and in particular the more labour-saving forms of heating and, in addition, the various types of central heating are growing in popularity. Over the whole of Great Britain domestic coal consumption fell from 37 million tons in 1952 to 33 in 1962, and in the same period the use of coal for electricity production rose from 35 to 60 million tons, and the total fuel oil consumption of the nation from 7 to 31 million tons. In the London region domestic coal consumption fell from 3·6 to 1·45 million tons during this period and the emission of smoke from coal is calculated to have fallen from 126 to 51 thousand tons and sulphur dioxide from 86 to 30 thousand tons. The total emission of sulphur dioxide in the London region, however, rose from 338 to 446 thousand tons, though much of this was emitted at a high level and under conditions where little would reach the ground.

Possible future dangers

The relative importance of smoke and sulphur oxides was discussed in the report for 1962. The range of concentrations of sulphur compounds normally present in urban atmospheres has not been shown to have a harmful effect *per se* though it may have a contributory effect in combination with other pollutants. Although there are good reasons for believing that as a result of the operation of the Clean Air Act, the reduction of smoke alone will have a decisive influence on health, the potential toxicity of sulphur dioxide and sulphuric acid in sufficient concentration, must not be forgotten. Research on this subject is continuing and meanwhile it is important to see that developments in fuel utilisation and in architecture and town planning do not produce further adverse conditions.

Electricity generating stations

Faced with the rapidly increasing demands for electric power the Central Electricity Generating Board has embarked on a policy of erecting very large power stations and the selection of suitable sites for these requires the most careful consideration. Attention has to be paid *inter alia* to road and rail communications, adequate supplies of cooling water, satisfactory geological foundations for the heavy buildings and health and aesthetic considerations. A 2,000 megawatt station may consume up to nearly five million tons of coal and may emit some 150,000 tons of sulphur dioxide per annum. Owing to the efficiency of combustion the emission of carbonaceous matter would be negligible. To minimise the effects of the emissions gases would be discharged from a single chimney 650 feet high at a temperature of 101°C and at a speed of nearly 75 feet per second. As a result of their buoyancy the hot gases would under normal atmospheric conditions rise to a height of nearly 2,000 feet.

Proposals for two such stations were under consideration during the year and in view of the very large quantities of sulphur gases to be emitted it was decided to invite a member of the Ministry's medical staff to serve as an assessor at the public enquiries which were held to consider the projects.

At both of these enquiries it was established that the probable behaviour of the chimney emissions from such stations could be based partly on mathematical calculations, partly on wind tunnel experiments and partly on extrapolation from measurements on existing power stations. Under stable atmospheric conditions such as may be associated with temperature inversions and where high levels of pollution are expected from other sources, the gaseous emissions from the power station chimney would rise high into the atmosphere. They would, as one witness picturesquely described it "punch a hole in the inversion", and cause no ground pollution. Under the worst conditions the maximum ground level pollution by gaseous effluents from such a station would occur at distances of some miles from the chimney at times of atmospheric instability and moderate winds, these are the conditions in which pollution from other sources is rapidly being dispersed. At one station it was shown that maximum three minute concentrations such as 15 parts of sulphur dioxide per hundred million might be expected with a wind speed of 20 feet per second. At the other station a concentration of 28 parts per hundred million might be expected under similar conditions. The area of maximum pollution would be constantly changing to and fro, and from side to side with variations in wind speed, turbulence and direction. The period of raised pollution at any one point would therefore last only a very short time. Taken over a period of months the maximum effect of these episodes of raised pollution would be to raise the sulphur dioxide pollution by something of the order of 0·5–1·0 parts per hundred million. Existing levels of pollution in the areas likely to be affected by these power stations were carefully analysed, and a review was made of current knowledge of the medical effects of varying levels of atmospheric pollutants. As a result of all these considerations, the medical assessor concluded that the emissions from these power stations would not add any appreciable hazard to health.

The results of these enquiries are important from the medical viewpoint, for they are a firm indication of the advantages to health which may accrue from the present trend towards the replacement of many small domestic and industrial emitters of pollution in our urban areas by a small number of efficient installations each burning very large quantities of fuel and discharging the waste gases at a height which would make only a slight contribution to ground levels of pollution. The ultimate result should be cleaner air.

The Winter of 1962-3

The winter of 1962–63 was an exceptional one. At the beginning of December a widespread fog, the most severe since December, 1952, was accompanied by heavy atmospheric pollution and by an increase in mortality and morbidity. It was described in the Report for 1962. A marked fall in temperature occurred on 22nd December and a period of exceptionally cold weather ensued and lasted until 4th March. Snow in greater or lesser amounts lay continuously in many parts of the country, and at times there was considerable disorganisation of transport. At Kew Observatory it was the coldest January since 1838, and in St. James' Park, London, the mean January temperature of −0·8°C was 5·4°C below normal for the month. The lowest temperature recorded in the country was −20·6°C on 23rd January at Stanstead Abbot's, Hertfordshire. There was less than the average fall of rain or snow during the two months, and the total hours of sunshine were above normal.

In London the effect of low temperature on mortality was not noticeable until immediately after Christmas, by which time on December 26th, the minimum temperature had fallen to −4°C. The daily mortality figures then rose continuously to reach maxima on 25th and 28th January, and again on 19th February. Superimposed on the mortality curve are a number of small peaks, many of which correspond to days of high atmospheric pollution, though the numbers of additional deaths are too small for individual incidents to be statistically significant. One period of particular heavy pollution when the mean daily figures from seven London sites rose to 820μg per cubic metre of smoke and 1,230μg per cubic metre of sulphur dioxide corresponds to the period of high mortality from 23rd to 28th January. At the beginning of this period temperatures were low, but during the latter part they rose well above freezing point.

A morbidity index based on daily numbers of applications for hospital beds made through the London Emergency Bed Service, with adjustments to eliminate Christmas disturbances and certain regularly recurring weekly fluctuations, shows a picture similar to the mortality curve. Warnings to restrict hospital admissions were in operation from 5th to 10th December and 7th January to 22nd February and probably caused a reduction in the number of applications to the Emergency Bed Service through an increase in direct admissions during these periods. These warnings may in particular have caused applications after the peak on 5th December to fall rather more rapidly than they should, and may also have been responsible for an apparent fall in demand from 7th to 11th January. The peak on 29th December may result from an inadequate adjustment for the Christmas period and be due to an abnormal build-up of cases over the holiday period and following the onset of the very cold weather.

Little evidence of influenza virus infection was observed until the last week of January, when outbreaks associated with influenza virus A2 were reported, mainly from southern England accompanied by an increase in the numbers of notifications from primary and influenzal pneumonia and of deaths from influenza and pneumonia. For several weeks influenza was largely confined to London and the south east, reaching a peak in London Administrative County in about the middle of February. In London influenza may have had an effect in keeping the morbidity and mortality rates at a high level for some time after the return of the warmer weather. The Emergency Bed Service reported an increase in applications for patients suffering from gastro-intestinal symptoms and for cases of infantile gastro-enteritis during February. In all other regions of the country influenza appeared about four weeks later than in London, i.e. during the latter half of February, reaching a peak in about the middle of March.

The Emergency Bed Service data for respiratory diseases indicates that the age groups between 5 and 44 years show no noticeable seasonal increase. Neither the polluted fogs nor the cold weather nor the influenza had any appreciable effect. The 45–79 year age groups showed the greatest increases both during the January–February period and as a result of the individual peaks of high pollution. The record of the 0–4 age group is of particular interest as it shows a comparatively slight increase in morbidity during January and February, and no noticeable increase as a result of any of the pollution incidents.

A survey of morbidity was also carried out during the winter by the College of General Practitioners (Carne, 1964). This was based on first interviews of patients seen in general practice and therefore includes less serious cases than the Emergency Bed Service data. The survey confirms the morbidity picture given above, including the absence of any apparent effect of air pollution on the younger age groups. Among the older groups there was a higher proportion of cases described as upper respiratory tract infections in January and February, whereas the December fog incident resulted chiefly in lower respiratory tract infections.

Lead Poisoning

An incident was reported from a London borough in which a child died as a result of lead poisoning and several other children were found to have a high level of lead in their blood. The children were in the habit of playing in a builder's yard in which were stored, pending disposal, discarded paint tins. The children had used these tins in their games and to sit on. Analysis of the remaining paint showed a relatively low level of lead content with the exception of one of lead-based undercoat which contained 15 per cent of lead. However, samples of dust from the builder's tip showed lead contents of from 3·7 to 15·9 per cent. The child who died was said to be "always sucking and nibbling things". It was thought that the most likely source of the lead poisoning was the dust in the yard which covered everything and was blown about. Children who played in a small garden nearby but not in the yard also had a somewhat raised level of lead in their blood which was thought to be due to the drifting of contaminated dust. There was no burning of discarded tins and no spraying of lead-containing paints. This incident points to the danger of discarding paint tins in places accessible to the public.

Liquid Egg (Pasteurisation) Regulations, 1963

At page 54 reference is made to four outbreaks of paratyphoid fever associated with Chinese egg products. There has been a long history of such an association and it is hoped that the Liquid Egg (Pasteurisation) Regulations, 1963, will mark the end of outbreaks from these egg products. In the report last year (p. 112) mention was made of the possibility of introducing compulsory pasteurisation of bulked liquid egg. Meantime it had been adopted voluntarily on an increasing scale as facilities permitted. The Regulations which came into force on 1st January, 1964, now make this compulsory.

These Regulations require that all bulked whole egg from abroad shall be pasteurised before import, and that all home produced bulked whole egg must be pasteurised before use. The Working Group, which was set up in 1959 is now continuing its work to study the heat treatment of other egg products, such as albumen, dried egg, and egg yolk.

Nicotinic Acid and Ascorbic Acid in Meat

During October and November the Department received four reports of nicotinic acid poisoning following the consumption of minced meat. The symptoms, which came on within half-an-hour of consuming the meat, were a generalised feeling of warmth, itching, redness of the face, neck, and extremities, and dryness of the mouth. These passed off within one or two hours, and no subsequent complications occurred.

The first report concerning seven cases came from the Medical Officer of Health of Rochford R.D. on 17th October. An analysis of the meat consumed showed it to contain 5 mg ascorbic acid and 11 mg nicotinic acid per 100 g meat. The butcher admitted having used a powder which gave the meat a "good colour".

The firm producing this powder was visited by the Medical Officer of Health, Kingswood U.D. and analysis of the powder showed it to contain 3·2 per cent nicotinic acid and 7·7 per cent ascorbic acid. On hearing of the food poisoning incident the firm withdrew supplies of the powder from circulation and substituted a powder half the strength of the original.

On 7th November the Medical Officer of Health, St. Albans, reported another outbreak which had affected 13 of the staff and 70 children in a school. The powder used by the butcher was of a different make and was found to contain 4·6 per cent ascorbic acid and 7·2 per cent nicotinic acid. The labels on the containers of both these powders gave instructions as to use—advising 2 ozs of powder to be mixed with 30 lbs of the mince.

Information later obtained from the Medical Officer of Health, Guildford, was that similar incidents had occurred in Woking and Guildford. Two people in each district had suffered from the same symptoms in August and September following the purchase of mince from a shop in Guildford where the butcher also used such a powder.

The fourth incident occurred in the Metropolitan Borough of Kensington when a man and his two children had symptoms following consumption of mince which was found to contain 41 mg of nicotinic acid and 4 mg of ascorbic acid per 100 g of meat.

Seven food poisoning incidents of a similar nature were reported by Press and Yeager (1962) from America, where powders of this nature had been used. Nicotinic acid (and its salts) and ascorbic acid preserve the bright red colour of the meat.

It is known that powders containing nicotinic acid (or its salts) and ascorbic acid have been in use in this country for at least five years without any reported ill-effects, but why a series of incidents such as described above should have suddenly occurred is not clear. In America two formulae are in use, the one containing 5 per cent nicotinic acid and used in raw meats, the other containing only 1 per cent of nicotinic acid which is used mainly as a seasoning in processed meats such as sausages. It is possible that a wide advertising campaign in this country led to an increased use of the stronger formula by family butchers during the year.

Used in the proper proportions on raw meat, and provided it is adequately mixed, there is no danger of these undesirable and dramatic symptoms, but in the incidents described above, investigations by the local authority staff, made it obvious that neither the proportions nor the procedure advised by the makers were being followed.

The Foods Standards Committee considered the use of these powders on raw meat to be a deceitful practice designed to disguise the age and quality of the meat. For this reason the Meat (Treatment) Regulations, 1964, banning the use of these substances on raw unprocessed meats were laid on 10th January, and came into force on 23rd January, 1964.

Soft Ice Cream Machines

The cleanliness of every single item of equipment and the scrupulous handling of the ingredients are vital to the production of good safe ice cream. Quality control operates in all manufacturing premises and local health departments continue to play a vital part in ensuring the high standard of ice cream. As a result ice cream as now produced in this country, is recognised as a clean safe food. The decentralisation of mix freezing and machine cleaning to vehicles and to temporary sites must therefore introduce difficulties of effective cleaning and sterilising. The agreement reached on a satisfactory routine was explained in the last Report (p. 111).

However, the popularity of soft ice cream has stimulated engineers to attempt to design machines which maintain the trade advantages without the disadvantage of the decentralisation of hygiene control. As a result the design of equipment has developed so rapidly that machines requiring simple sterilising procedures and allowing for removal of mix hoppers are now becoming available. These hoppers, complete with unsold ice cream mix, can be placed in refrigeration until required for the next sales period. Technological advances have also resulted in the production of frozen ice cream which can be stored and is yet ready for sale from machines completely different in design from the rapid freezers which were new only two or three years ago.

All these developments are being watched and it is gratifying to report that the engineers in the ice cream industry work closely with the Department to ensure that no new development emerges without suitable cleaning and sterilisation procedures being available and made known to all operators.

Transport of Meat in Bulk

Study of the problems of hygienic transport of meat emphasises the need for improving the manual handling of carcase meat and of smaller parcels in quantity. The simple movement of carcase meat from a small slaughterhouse to an attached retail shop is no longer the problem. The design of slaughterhouses has improved, that of retail sales points has changed, but apart from minor constructional detail of vehicles there has been no basic change in the methods of transporting bulk meat. The fundamental difficulty is that design and invention has to concentrate on improving the existing system because slaughterhouses, wholesale depot markets and retail shops have themselves been planned or amended to accommodate the type of vehicle now in general use. Thus a new system involving different types of vehicles is impracticable and possible changes are limited to those inside the box carrier type of vehicle and the elimination of platform loading vehicles.

Much work is going on in transport and trade circles towards the design and construction of efficient insulated vehicles for long distance transport. This is coupled with methods of testing insulation efficiency. Experiments are being conducted in the use of new package materials for holding quarters and half quarters of carcases without the trade difficulties that usually follow from the exposure of too great an area of cut meat surface. Some of the new low density plastic materials are being tried. It is unlikely that by themselves they will prove effective, but such materials used as a lining to heavy duty paper bags may be more successful. This idea could be expanded to provide disposable envelopes or liners for meat transport vehicles so that in effect each load is a separate operation with no part of any meat or meat carcase being in direct contact with the vehicle body. Such a method may be of use in future for the carriage of overseas meat. At the moment this is at the experimental stage. At the same time it is increasingly obvious that, without any further design or consideration, smaller parcels of bulk meat, packed in already available materials, can be delivered to retail shops in a much more satisfactory manner than is usual now. In this respect the Food Hygiene (General) Regulations, 1960, apply particularly to the transport of meat, and with the persistent association of meat and meat products as the major cause of food poisoning incidents, there would seem to be a case for stronger and more general application of the existing law.

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Nutrition

The indices of nutritional change (*see* previous Reports)

No striking change occurred in the available indices in 1963 compared with 1962.

The Committee on medical and nutritional aspects of food policy

The following problems received attention directly from this Committee, and/or indirectly from one of its expert panels and working parties:—

1. Protein requirements of man

The Working Party which began work last year reported during 1963 and its report was sent to the World Health and Food and Agriculture Organisations for the attention of their Joint Expert Committee which met in October to consider the requirements for protein of man. This report was thought to be of value for teaching purposes and is to be published in the series on Public Health and Medical Subjects.

2. Milk treated at "ultra-high" temperatures (UHT milk)

Of recent years, much interest has been shown, both in this country and abroad, in the development of processes for the heat treatment of cow's milk aimed at providing long storage life without the change in flavour which is associated, for example, with sterilised milk. In such processes the temperature of the milk is raised to between 130 and 150°C for a few seconds only. Shillam, Dawson and Roy (1960), and Shillam, Roy and Ingram (1962), reported that milk thus treated was less satisfactory for the rearing of calves than was pasteurised or raw milk. A Working Party was therefore set up to consider the possible implications of this finding for human nutrition. This Working Party reported that although changes occur in milk treated at high temperatures which render it less satisfactory for the rearing of calves similar changes also occur in other forms of milk which have undergone severe heat treatment, for example roller-dried and evaporated milks which have nevertheless stood the test of time in infant feeding. The conclusion must be that the human baby reacts differently from the calf. The Working Party expressed the view that there could be no objection on nutritional grounds to the sale of U.H.T. milk for human consumption.

3. Ferrum redactum in flour

Studies in mental patients in Belfast (Elwood, 1963) suggested that ferrum redactum was poorly absorbed from flour. This could be due either to the form of iron used or to its incorporation in bread which could reduce the extent to which the iron was accessible to the digestive fluids. On the other hand studies previously made in the United States (Steinkamp *et al*, 1955) indicated that there was no important difference between the absorption of ferrum redactum and of other iron preparations incorporated in bread fed to healthy volunteers. With the encouragement of the Ministry of Health and Local Government of Northern Ireland and of the Ministry of Health in England, Dr. Elwood has already embarked on work which should throw further light on these matters but his study had not been completed at the end of the year under review.

4. *Dietary study of pre-school children*

In May, 1963, a survey was begun of the diets of 434 children aged 9 months to 4 years 11 months drawn from twenty-five areas at random throughout Great Britain but the analysis of the results had not been completed at the end of the year. Where it could be arranged, medical and dental examinations were also made. It was also necessary to prepare up-to-date tables of nutrient composition of foods consumed by children and, in order that in future survey findings might be analysed by computers with as little call as possible on the time of trained dietitions, data were prepared relating to made up dishes as eaten by British children. These tabulated data are unlikely to be published but they will be made available to other investigators.

In the tabulation of these data the Committee was greatly helped by members of the staff of the Medical Research Council Social Medicine Research Unit, and of the Science and Plant Health Division of the Ministry of Agriculture, Fisheries and Food. The Committee is also indebted to the medical officers and dentists in the public health services throughout the country who examined children whose diets were studied. It is worth recording at this point that no case of overt malnutrition was reported by any of the medical officers concerned.

5. *Irradiation of food*

The Working Party appointed in 1962 to study this subject had not completed its task at the end of 1963.

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IX

DENTAL HEALTH*

Hospital Dental Services

Good progress is being made in the rebuilding and modernisation of dental teaching hospitals. The new building at University College Hospital has been completed and is in occupation, and the modernisation of the Department of Dental Prosthetics in the old building is due to be completed in 1964. At Bristol, a large part of the new extension to the school is already in use, and the remainder will be available in March, 1964. These schemes have already enabled the intake of dental students to be increased from 25 to 50 in both University College Hospital and Bristol. Their modern equipment will allow the most up-to-date and advanced techniques of dentistry to be taught there.

Considerable progress has been made with the provision of a new dental school at Cardiff and with schools at Birmingham, King's College Hospital and London Hospital, and plans for that at Liverpool have been approved. Preliminary work on the schedules of accommodation is in progress for Guy's, Leeds, Manchester and Newcastle. Additional accommodation for the existing number of students is being provided at Sheffield.

The staffing of dental departments in all hospitals has been under review. The review committees set up to review medical staffing recommended by the Platt Report were each supplemented by two dental assessors chosen from a panel of consultant dental surgeons, and they were asked to make recommendations in the light of advice tendered to the Minister by the Standing Dental Advisory Committee.

The Committee advised that the dental staff required for hospitals should be calculated on a population basis, and suggested the figure of one consultant dental surgeon, with supporting staff, to each 250,000 of the population. As no specific similar recommendation for the provision of orthodontic consultants was at that time available, Boards were also asked to look at the requirements for this speciality on the basis of present local demand.

The extension of the old dental department at the Royal Portsmouth Hospital was completed, and officially opened by the Minister in October. This is a noteworthy development, as it provides up-to-date accommodation in close proximity for both consultant dental surgeon and consultant orthodontist, with common laboratory and general facilities. The consultant orthodontist has initiated a scheme whereby school dental officers and general dental surgeons in the area act as part-time clinical assistants. This provides a strong link between the School Dental Services, General Dental Services, and Consultant Hospital Services, which is raising the general standards of orthodontic knowledge and treatment in Portsmouth. This pattern of hospital dental department is one which also ensures that children in need of orthodontic treatment will have the benefit of expert oral surgical and general paediatric treatment if it is needed. The development of this kind of joint department in other centres would appear to have great advantages for the progress of dental services in the future.

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* Information on the work of the Regional Dental Officers appears this year in the Ministry's Report.

Dental Auxiliaries

In accordance with Section 43 of the Dentists Act, 1957, the General Dental Council in November laid before Parliament an Interim Report on the Experimental Scheme for the training and employment of a class of ancillary dental workers. These would be (*a*) permitted to undertake the filling of teeth and the extraction of deciduous teeth and (*b*) employed to do that kind of work in the course of the provision of national and local authority health services. The Report is concerned with little more than the preliminary arrangements and training during the first three years of the first two years' intakes each of 60 who entered the School for Dental Auxiliaries at New Cross in October, 1960 and 1961. The Report concludes that the value to the community of this class of auxiliary worker, for which purpose the scheme was inaugurated, cannot be judged until more information is available on the amount and quality of the work being done by auxiliaries, their acceptability and the economic aspect of their employment. At the end of the year 106 dental auxiliaries were employed by local authorities.

Dental Research

In November, 1962, the Department of Scientific and Industrial Research set up, in consultation with the Ministry of Health, the Committee for Research on Dental Materials and Equipment. A recently published report of the Committee's proceedings gives an indication of the field being covered.

Research and investigations with the aims of producing the perfect material for restoring teeth and improving materials in current use, with special reference to the conservation of anterior teeth, are being carried out. Work is in progress at the Imperial College of Science and Technology, London, on basic research with regard to the surface phenomena relevant to adhesion to tooth enamel. At the Laboratory of the Government Chemist studies with the aim of improving silicate cements, chemical and physio-chemical analyses of typical powders and liquids are being carried out in order to correlate their physical and chemical properties with clinical behaviour. At the D.S.I.R.'s Warren Spring Laboratory in collaboration with the Eastman Dental Hospital (London), under the overall responsibility of the National Research Development Corporation, the work concerns the use of high grade ceramic oxides for the construction of artificial teeth, jacket crowns and inlays.

In the field of denture base materials, work is being carried out at Queen's University, Belfast in connection with the explosive and electrohydraulic forming of stainless steel. The use of this process in fields other than dentistry eliminates to a large degree the need for casting or welding and makes possible the production of some components which cannot be made by conventional methods; this may well be turned to advantage in the dental field.

The problem of fracture of small diameter friction grip burs when used in turbine handpieces is being investigated at the National Engineering Laboratory and the National Physical Laboratory.

The design of dental equipment in relation to dental operator fatigue is being studied by ergonomic experts of the D.S.I.R.'s Warren Spring Laboratory.

Research current or completed during 1963 supported by the Medica Research Council at Universities and Teaching Schools included: at Birmingha University, the bacteriology of dental caries and of the dental plaque, th structure of mature enamel and fluoride content of the dental plaque, taxonom of oral flora, the biochemistry of saliva and dental calculus and the chemica changes in dental enamel in early caries; at Durham University histologica studies of the developing tooth and its supporting structures; at Leeds University studies in the mechanism of calcification. London University and the Roya College of Surgeons of England have an extensive programme including th reaction of bone cells to the pressure of secondary carcinomatous deposits comparisons of the normal processes of keratinisation in mouth epithelium wit those observed in cancerous and pre-cancerous lesions, activity of muscles o mastication of children with normal and abnormal occlusion; effects of nutritional factors in the development and maintenance of oral tissues, ultra-structur of human amelogenesis and early enamel lesions, bacteriology of dental disease relation between the chemical composition of teeth and resistance to caries relationship between blood vessels supplying the pulp of mammalian teeth an the disposition of their roots. At Manchester University, the fluoride conten of the dental plaque, and fluoride and caries are being studied.

At the meeting, in April, of the British Division of the International Association for Dental Research 81 papers were read. These covered a wide variety o subjects ranging from the staining of developing teeth which may occur with tetracycline, preliminary bacteriological studies of the dental plaque and the social distribution of temporomandibular joint dysfunction.

Fluoridation

Fluoridation is continuing in the study areas of Watford and Anglesey.

In June, 1963, the Minister issued a general approval (under Section 28 of the N.H.S. Act, 1946) to local authorities to arrange, in areas where water supplies are naturally deficient in fluoride, for the addition of fluoride to the level appropriate for prevention of dental caries. A number of authorities had already sought and received this approval.

The booklet "Fluoridation", setting out the salient facts concerning the addition of fluoride to water supplies, was issued by the Ministry in April, 1963. This was distributed to all members of Parliament, doctors, dentists, local authorities, executive councils, and a number of other public bodies. Altogether 95,000 copies have been issued. It is hoped that local authorities will now make arrangements covering all areas where the water is deficient in fluoride so as to secure as soon as possible improvement in dental health.

In November, 1963, the Chief Medical Officer sent a letter to all medical officers of health concerning two matters which had received varied amounts of publicity.

A letter, "Sodium Fluoride and Cellgrowth" by Berry and Trillwood, on page 1064 of the *British Medical Journal* for 26th October, attracted considerable publicity in this country and indeed throughout the world. Professor Neil Jenkins of Newcastle in reply drew attention to certain defects in the design of the experiments. No attention was paid to the normal plasma concentrations of fluoride which, unless the intake is grossly excessive, is maintained by the body at a near constant level of approximately 0·18 p.p.m. The minimum concentration at which Berry and Trillwood found inhibition of growth in culture of cells derived originally from human cancer and mouse fibroblasts is, in fact, less than normally present in the body.

In addition the letter pointed out that epidemiological surveys have shown that no difference in growth can be detected in children born and brought up in areas in the country having wide variations in the fluoride content of their respective drinking waters. The letter also dealt with fluoridated water and home cooking. It refuted suggestions that there might be danger in drinking water which had been left boiling for a long time or in using fluoridated water for soups, etc.

The recommended level of 1 p.p.m. for fluoridation was chosen in the knowledge that it provided a wide margin of safety. A person's intake of fluoride varies from day to day and it is the average intake over a prolonged period which counts. The safety factor is such that a person would come to no harm from consistently consuming foods prepared with fluoridated water which had undergone prolonged cooking.

The cooking habits of housewives in areas where the waters contain natural fluorides are not different from the habits in other parts of the country. In areas of high natural fluoride apart from dental mottling no evidence of harmful concentrations has ever been produced.

There is no scientific evidence for the statement being circulated that 1 mg of fluoride constitutes the "daily safety dose".

In natural fluoride areas with approximately optimal levels of fluoride, undesirable mottling does not occur and the teeth are unusually tree from discolouration or decay.

Laboratory Studies

Laboratory studies of the mode of action of fluoride in the prevention of dental decay continue in the dental schools and the chemical and physical departments of universities.

The theory that fluoride acts by reducing enamel solubility is still the most generally acceptable.

However, recent work has suggested that fluoride favours precipitation of calcium phosphate from saturated solutions such as saliva. If this action takes place in the mouth the question arises, does fluoride act not only by reducing solubility of enamel but also by encouraging remineralisation?

Evidence on the enzyme inhibitory effect of fluoride is inconclusive. The validity of this hypothesis that fluoride acts by enzyme inhibition of bacteria which cause dental decay depends on our knowledge of the action of fluoride in the plaque.

Hardwick and Leach (1963) reported high but variable concentrations of fluoride in the dental plaque from individuals in a low fluoride area. The form in [illegible] fluoride is present in the plaque is unknown. If the fluoride is ionised or released in ionised form at about pH 5·0 it might prevent decalcification of enamel by acid from bacteria in the plaque. Fluoride present in a bound form might act as a reservoir of fluoride in the plaque.

Jenkins (1963) has reported work in progress to determine the proportion of free fluoride in the dental plaque and whether the concentration of fluoride in the plaque is affected by the level in the drinking water.

Establishment of the enzymatic hypothesis might open up a field of use of fluoride additional to fluoridation.

Maternity and Child Welfare

In 1963 28,632 mothers and 53,899 children were treated in local authority clinics showing a slight increase in the number of children receiving dental care. The further decline in the number of mothers treated was not unexpected and need not be regretted because of the increasing use made of the general dental service. It is more satisfactory that women should be under the regular care of their own dentist than that they should seek priority treatment periodically, as they become eligible for it, from local authority clinics. The latter can make a very useful contribution by treating mothers who are not in the habit of obtaining regular dental treatment from a private practitioner.

Attention should be drawn to the difference between numbers treated in the general and local authority dental services in various parts of the country. The demand for priority treatment is relatively high in the south of England, but in the north of England, the midlands and in Wales, it leaves much to be desired.

The number of pre-school children treated increased as well as the amount of conservative treatment completed. Only about one child in four, aged 3 or 4 years has a full set of teeth free from decay or fillings, on average about 4 or 5 teeth per child have been affected by caries; one child in ten has as many as 10 or more defective teeth. Two-year-olds often suffer from severe tooth decay most of which is caused by over-indulgence in sweets and refined carbohydrate foods. Vitamin supplements are an important addition to the diet of the young child, but if these are administered incorrectly and undiluted they can damage the tooth enamel. In this connection it is now recognised that the immature enamel, shortly after eruption of the tooth, is particularly susceptible to attack.

More authorities are now taking steps to ensure that children at the age of 3 or under have a dental examination; some send a "third birthday" card which includes the date of a dental appointment. It is hoped that many more authorities will adopt this excellent practice. If mothers of young children can be persuaded to follow the dental officers' good advice it can help to prevent the onset of dental decay.

The figures for 1963 show that for every 100 children treated the number of conservations (158) exceeded the number of extractions (117), a further improvement on previous years.

Staffing

During the year there has been an improvement in the number of dental officers recruited to the local authority services. Whilst the staff spend about ninety per cent of their time on treating school children the increase naturally benefits the priority classes, especially children under 5 years.

Orthodontic Services

The life of the Health Service has coincided with a period of marked advance in orthodontic thought. As a result of the application of basic research into the growth and development of the oro-facial structures and the various influential factors it is now apparent that the scope of the subject goes far beyond the limited concept of mechanical correction of established occlusal defects. The basic principles upon which the discipline now rests are fundamental to the requirements for the establishment of a satisfactory dentition. In consequence it is certain that the proportion of the child population who require some form of orthodontic care is considerably greater than was originally thought.

The total number of new cases commenced in all these services during 1963 approximated 140,000 or 20 per cent of the children at risk. There is considerable regional variation ranging from 10 to 20 per cent. Demand is generally higher in the southern part of the country and coincides with a greater sophistication in dental consciousness. It is significant, however, in this regard that a sharp increase in G.D.S. estimates in 1963 (16·4 per cent) was noticeably greater in regions of low demand, e.g., the demand in Birmingham region, previously the lowest, rose by 31 per cent.

There is a whole-time equivalent of 35 Consultant Orthodontists in the Hospital and Specialist Service and a similar whole-time equivalent of orthodontists employed in the School Dental Service, but by far the greater number of orthodontic cases are treated by general dental surgeons in contract with the local executive council.

In view of the importance of orthodontics in any programme of child dental health the attention of Regional Hospital Boards, Hospital Management Committees and Local Authorities was again invited to the joint circulars H.M.(55)67 and M.E.288/55 issued by this Ministry and the Ministry of Education relative to the appointment and utilisation of Orthodontic Consultants to Regional Hospital Boards. It is hoped that the fullest use will be made of the services of existing Consultants by the School Dental Service not only in respect to individual cases but also for advice on general treatment policy and that Regional Hospital Boards and Hospital Management Committees will give further consideration to the consultant requirements of their areas. During the year the Ministry's Standing Dental Advisory Committee commenced consideration of the requirements for orthodontic staffing in the Hospital and Specialist Service arising out of the Platt Report. Their advice to the Minister is expected early in 1964.

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X

NURSING

In the opening paragraph of the nursing chapter of the Annual Report last year, reference was made to the changes which have taken place in the hospital service which affect the work and responsibilities of the Senior Nurse Administrator. In the course of 1963, the Minister set up a small Committee under the Chairmanship of Mr. Brian Salmon, to look at the subject of "The Senior Nursing Staff Structure".

A Joint Committee of the Standing Medical and Standing Nursing Advisory Committees prepared a report on "Communications between Doctors, Nurses and Patients", which was issued to hospital authorities by the Ministry. In this report reference is made particularly to the important rôle of the ward sister and her staff in communication with patients and relatives. This matter of communications and relationships between nurses, their patients and relatives found a place in the General Nursing Council's 1962 experimental syllabus for general nurse training, but it needs to be followed up through such means as staff meetings and group discussions as an integral part of nursing practice.

Nursing Education

The trainee

The experimental syllabus for general nurse training referred to above has been well received, and an increasing number of training schools have been seeking approval to train in accordance with this syllabus.

The syllabus of training for pupil nurses in non-psychiatric hospitals has been revised, the intention being to widen the scope of training, and so increase the experience gained. The number of pupil nurses has increased in the past year, as has also the number of pupil nurse training schools. Some general nurse training schools have been converted to training for the Roll, whilst others now are undertaking both. Plans being submitted for the nurse training schools of new district general hospitals are providing teaching accommodation for both student and pupil nurses in one building.

The final report of the Assessment Committee on the experimental nurse training at Glasgow Royal Infirmary was published in 1963. This experiment created wide interest, and is a valuable contribution to methods of providing basic nursing education. It is disappointing to learn that, in spite of reasonable publicity, there was a dearth of applicants, although the calibre of those who did apply was high.

Another important experiment in nurse training began at St. Thomas' Hospital, London, in September, 1963. This is a shortened training of two years and two months, for university graduates and others of comparable educational standard. This experiment will provoke interest educationally, and the follow-up of these students on completion of training will be interesting.

The teacher

There is shortage of registered nurse tutors, which has been aggravated by a number of factors, for example, the shorter working week and longer leave; the introduction of a broader syllabus of training which is essential in the light of the increase in medical specialities and in the greater range of drugs being used; and a change in the methods of teaching which gives greater emphasis to tutorials and discussions.

The revised two-year syllabus for the University of London Sister Tutor Diploma came into force in September, 1963. There has been much discussion about the length and content of this course, and some suggestion that the length might be reduced for applicants who have a high general educational attainment, or other preparation in teaching. The scientific content has been thought by some to be overweighted at the expense of teaching methods and the organisation of the school of nursing. It is becoming increasingly evident that fewer nurses are prepared to interrupt their life in their 30's and 40's in order to take a two-year postgraduate course away from their home. The payment of a special allowance to student tutors who, while living in lodgings during attendance at the course, are obliged to maintain an existing permanent home for their dependants, may now encourage some applicants to come forward who would otherwise have been prevented from doing so.

The increasing number of clinical instructors has contributed to meeting the students' training needs. The 1962 experimental syllabus for general nurses is dependent on the integration of teaching throughout the whole of the training period, and clinical instructors may well fulfil an important function here. Some have been appointed to mental hospitals where they have done valuable work having been well accepted by ward and teaching staff alike. Due to diversity in the work, responsibilities and preparation of clinical instructors at the present time, evaluation at this stage is difficult.

Hospital cadet scheme

The transition from school to entry to training has been made easier for some "16 year olds", for whom full-time education to the age of 17 or 18 is impossible, by carefully planned nursing cadet schemes, as recommended in H.M.(63)37. Further education in various subjects for intending student nurses is being provided through these schemes, up to Ordinary Level of the General Certificate of Education. Courses designed on more practical lines for potential pupil nurses are also being provided. Although psychiatric hospitals have been less active in developing nursing cadet schemes, there is a growing awareness of their value in this field also. Thus, through continued improvement, both in the standard of such courses and in methods of assessing and preparing young people, nursing cadet schemes are making a significant contribution to the recruitment of student and pupil nurses.

Nursing service

One of the most encouraging features of the past year has been the help given by the wide range of post-certificate courses made available to nurses. Courses of varying lengths and content were arranged by a number of Regional Hospital Boards often with the help of education authorities as well as by the Royal College of Nursing and National Council of Nurses of the United Kingdom, and

King Edward's Hospital Fund for London. Subjects studied include developments in the Health Service, methods of staff management and welfare, responsibility of the Committee member and hospital planner, and the importance of public relations.

The development of specialty units, such as accident, neurosurgical and thoracic surgical, has increased the need for special nursing experience in which hospital clinical in-service courses have assisted. In anticipation of the closure of the fever part of the register of nurses in December, 1967, H.M.(63)9 drew the attention of hospital authorities to the necessity of ensuring that sufficient nurses have experience in nursing patients suffering from infectious diseases.

Appointments in the local health authority services in health visiting, domiciliary midwifery, or in home nursing, require staff to attend postcertificate courses. These are available throughout the country, and there are also courses preparing for senior posts, as administrators and tutors in the public health department. The demand for post-certificate courses is steady, but there are not sufficient candidates to meet the full requirement of local authorities. Overseas students, who may be sponsored either by their own governments or by the World Health Organisation, are accepted in these courses.

Recruitment

The number of nursing and midwifery staff has continued to rise over the past year. The total number of whole-time registered nurses in mental hospitals is the highest on record for female nurses, and for male nurses since 1956. Similarly, in hospitals for the mentally sub-normal there was a further rise in the number of both male and female whole-time registered nurses. The number of part-time registered nurses showed a marked rise and, although the increase in enrolled nurses was considerable, more will be needed if we are to meet the needs of a changing and developing nursing service.

Under the local authority Ten Year Plan for Health and Welfare Services, it is envisaged that approximately one-third more staff, mainly State Registered Nurses, will be required to qualify by post-certificate courses for the community services alone and in many areas the demand exceeds the supply.

Nursing administration (public health)

Public health nursing services are becoming more complex. Early discharge from hospital of sick patients and of mothers after confinement, and the increasing age and frailty of large numbers of people cared for at home, emphasise the need for closer working between general practitioners, hospital staff, social workers and voluntary agencies.

It is evident that there is need for increasing flexibility in the service, and for good management of local health authority nursing services. Many authorities have appointed Superintendent Nursing Officers to do this, as recommended in circular 118/47, with advantages in flexibility, co-ordination and efficiency.

Midwifery

The high birth rate and continued requests for admission to hospital are still making heavy demands on the midwifery staff. The distribution of midwives throughout the country presents an uneven pattern, and in some areas midwives are working under considerable pressure. The practice of discharging mothers from hospital earlier than the tenth day which is discussed in Chapter VII will undoubtedly throw additional strain on hospital midwifery staff unless the scheme is carefully planned. There are, however, encouraging signs that the number of midwives in practice is increasing. It is important that close attention be paid to the means of retaining those already in practice, and of encouraging others to return to the maternity service. The married midwife, whether full or part-time is of significant help, and there must be greater adaptability in meeting her social needs, to fit into an essential 24 hour service.

Preliminary studies of the pattern of staffing in the maternity services are now being planned and it is hoped that reliable and useful information will be obtained in due course.

Midwifery training

Advances in maternity care, and the future rôle of the midwife, call for a revision of the syllabus of training of pupil midwives and this is now being studied by the Central Midwives Board. There is an accelerated movement towards a single period of 10 months midwifery training, in place of the present pattern of First and Second Part training.

Obstetric nurse training

Obstetric nurse training is now firmly established, but it is at the present time premature to predict its effect on the number of registered nurses undertaking midwifery training in the future.

Post-certificate courses

The demand for post-certificate study and refresher courses is growing. It is important to encourage and stimulate midwifery staff to keep up-to-date, in order to maintain both a high standard of service and the ability to assist in the teaching of the mothers.

Domiciliary midwifery service

The shortage of midwives in the domiciliary field is, on the whole, less acute than in the hospital service, particularly where the local authority undertakes the training of pupil midwives for the Second Part examination. Many newly qualified midwives prefer to start their professional career in domiciliary work and authorities providing accommodation and other amenities experience little difficulty in attracting staff. The establishment of rota systems and, in some areas, a 5-day week for domiciliary midwives has done much to improve the morale of the domiciliary midwife. The organisation of such systems, and the work involved in arranging for care of mothers and infants discharged early from hospital, have made heavy demands on the administrative side of the service. Some local health authorities have found it necessary to increase their supervisory staff in order to meet these requirements.

Whilst planned early discharge is practised in some areas with success, many hospitals still discharge mothers just when the need for beds arises. This causes a great deal of dissatisfaction to both patients and midwives. If, however, an assessment has been made early in the pregnancy, when the mother is discharged early from hospital there is generally no difficulty in arranging for the post-natal care of those who have reasonably good home conditions. This type of work is increasingly popular with part-time married midwives, who find themselves able to combine these duties with their home commitments.

Local Health Authority Services

Health visitors

In his early years, it is desirable that the handicapped child should be at home, supported by the family doctor and the help which local health authorities provide for all children. The health visitor, is in a favourable position to help parents in the early days of the child's life and later to create an atmosphere like that in which a normal child can learn.

The health visitor should work with the general practitioner, the mental welfare officer, and others who may be concerned with the child's future, and be aware of the contribution of voluntary organisations and perhaps assist in their formation.

With the increase in the number of handicapped children surviving in the community, it is essential for health visitors to keep abreast of the problems they present within the family, and of provision made for their welfare. Local authorities can assist by arranging in-service staff education, by sponsoring or encouraging attendance at relevant study days and conferences, and by providing literature which reviews changes and advances in care and treatment.

Some authorities consider it advisable to designate one or more senior health visitors or Group Advisers to take responsibility for this special work.

Attachment of health visitors to family doctors' practices

A steadily increasing number of local health authorities has arranged for health visitors to work with general practitioners in single or group practices. In some cases, two health visitors are working with a larger group practice. The success of such arrangements is clearly demonstrated by the large number of requests from general practitioners for this arrangement.

Group advisers

A few local health authorities have appointed Group Advisers. The Health Visitors' Association has organised an experimental course, of two weeks' duration, for these Group Advisers and staff with similar responsibilities. This consists of lectures and discussions, with a period of practical work during which students are required to prepare and present a project. The course has yet to be evaluated, but it has been an interesting innovation.

Home nursing

The Ten Year Plan proposes an increase of more than 2,000 nurses. There are at present over 7,000 whole-time-equivalent State Registered Nurses, and approximately 750 State Enrolled Nurses, employed in home nursing. The number of registered male nurses working as home nurses has increased. For the State Enrolled Nurse, in-service training for work on the district has been organised by several authorities, in association with the Queen's Institute of District Nursing.

With new developments, new needs appear. For example, patients discharged from psychiatric hospitals, for whom drugs have been prescribed, often need help from home nurses to persevere in the taking of these drugs, without which relapse may occur. Relatives of such patients are sometimes perplexed, and may look to home nurses for help in their day-to-day problems.

Discharge of patients from hospital

Circular HM3/63. Although the full effect of the circular cannot yet be appreciated there are a number of authorities where health visitors see patients in hospital prior to discharge and are able to make arrangements for home nursing and domestic help if necessary. In some instances where special nursing care and facilities are required the home nurse visits the hospital to study the equipment used and the management of the patient before he or she is sent home. In many cases it is necessary to teach relatives the home management of the patient.

Nursery nurses

Nursery nurses are found in an increasing number in nurseries of maternity units and in small numbers in children's wards of special hospitals, particularly eye hospitals. They do useful work in these specialties but introductory in-service training should be given and they should not undertake duties for which they are not prepared.

Home help service

There is great variation in the number of home helps employed by authorities with apparently similar needs and while the need for expansion of the service is accepted efficiency depends on quality as well as quantity. This has been demonstrated by those authorities who have provided simple practical training courses for their domestic helps. Different views are expressed about the qualifications and training necessary for home help organisers but the only instruction at present available is the course arranged by the Institute of Home Help Organisers.

The home help service continues to cater mainly for the aged and the chronic sick, but a few authorities are providing domestic help free on medical recommendation to expectant mothers suffering from toxaemia who are unable for domestic or other reasons to go into hospital. There has been an increase in the number of local health authorities providing evening and night attendance and these arrangements support families caring for relatives with chronic illnesses and are available for elderly sick people living alone.

Mental Health

The growth of psychiatric treatment in general hospitals makes experience in general hospital psychiatric units available to student nurses both from mental and general hospitals and also to qualified mental nurses seeking wider experience. The psychiatric units of several general hospitals are already combining with mental hospitals for the psychiatric training of general nurses in 18 months. In HM(60)90 the Department advised that the senior nurses in charge of psychiatric units should have appropriate experience and qualifications in mental nursing. The units now open and those to be completed will require many more appropriately qualified nurses. General hospitals therefore planning a psychiatric unit in the near future might well consider seconding selected general trained nurses for psychiatric nurse training.

Nursing administration

Experiments in combining the whole mental hospital under one nursing head was referred to in a previous report and at the present time several hospitals have adopted this pattern. The amalgamation has taken place when the post of matron or chief male nurse or both, has fallen vacant.

Training of the enrolled nurse

The nurses Bill came before Parliament at the end of 1963 to permit rules to be prepared for training enrolled nurses in psychiatric hospitals and for enrolling nursing assistants already experienced in the care of the mentally sick and the mentally sub-normal. Syllabuses have already been prepared for this training.

Mental subnormality

Improved local health authority facilities for the care of the mentally subnormal may reduce to some extent the number of children being admitted to hospital, but those who are severely handicapped undoubtedly will need nursing care. The number of beds for the subnormal has increased steadily since 1956 and the planning of new units emphasising the need for homely conditions suitable for small groups is attracting attention. There is great interest in units for spastic, mentally subnormal children which bring nurses, physiotherapists, speech and occupational therapists together as a team.

Overall forward look in the light of the Ten Year Plan

Nursing studies

As the 10 year hospital plan begins to take shape more studies are being directed to the staffing needs of the service. The study on nurse staffing standards, following initial work in depth, has reached the stage of a wide-scale enquiry to explore in standard form the deployment of staff in 130 acute hospitals of 200 beds and over. Similar studies in the psychiatric and maternity and other specialised fields are in progress.

Progressive patient care

During the past year the number of intensive care units has increased and other units are being considered. A study designed to provide information about the numbers of patients requiring minimal nursing care is now in progress. The survey is being undertaken in 25 general hospitals, including teaching hospitals, in various parts of the country and will cover a seven months period in each hospital. In addition to providing information about the percentage of patients who require little nursing care, a great deal more will be known about the wider needs of these patients. Many of them may not require full hospital in-patient facilities if alternative provision, for example day beds in out-patient departments, is made available.

Hospital planning programme

The part played by nurses in the processing of building schemes continues to grow in importance. The commissioning process of a hospital begins at the early stage of planning when operational policies should be recorded and will lead to the preparation of manuals of guidance for staff so that departments are used as intended by the "planner". At a later stage it is essential that evaluation or "design in use" studies should be undertaken.

In order to prepare experienced nurses to become aware of the changes which are likely to occur as a result of the building programme and to prepare them to take part in the planning process, special courses are being organised by the Department and the King Edward Hospital Fund, the first of these is planned to take place in January, 1964. The value of using work study techniques at an early stage of planning has also been recognised. There are now between 20 and 30 nurses employed as work study officers in the regions. Most are working on studies for improved efficiency but they are now also beginning to play an important part in planning projects.

XI

MENTAL HEALTH

Psychiatric Units in General Hospitals

Psychiatric wards in general hospitals have a long history: as early as the 13th century one such ward existed in a general hospital in Cairo, and at the Julius Spital at Würzburg, patients suffering from mental disorders have been treated under the same conditions as those afflicted with other diseases since 1576. Special wards for psychiatric patients were first established at Guy's Hospital in London in 1728 and similarly in New York Hospital in 1792. Such wards have tended to provide intensive treatment for acute disorders and patients generally stayed only for brief periods. This phase was followed by the establishment of larger, separate, specialised hospitals. Many of these were built in geographically isolated situations and, towards the end of the 19th century, their main function was envisaged as the protection of the community. Such hospitals therefore tended to be restrictive in their régimes and the majority of their wards were closed. This particular function differed fundamentally from that of the general hospital unit where the emphasis was on intensive treatment.

Since the great activation of psychiatric treatment, which started in the early 30's, the situation gradually changed again. With the help of the advances made since then, in all forms of treatment, psychological, social and physical, it has become possible to control the acuter phases of psychiatric illness more effectively and within short periods of time. These acute phases, particularly of psychotic illness, are frightening to those who live in close contact with the patient. This has, in the past, resulted in the expulsion of such patients from the community into the isolated custodial institution. Even in the recent past, before modern forms of treatment were available such crises were generally comparatively short but nowadays, they can commonly be completely controlled, often without admission to hospital, partly because the patient is less reluctant to seek treatment and the illness can therefore be treated at a less advanced stage. Acute crises treated in hospital also usually subside much more quickly than formerly. After these turbulent phases the illness generally takes a more even course for which a restrictive régime is quite inappropriate. The small minority who need compulsory admission and restriction for short periods during an acute crisis need not be segregated completely from other psychiatric in-patients, but may need special observation or nursing in a single room until their behaviour has become socially acceptable.

Exceptionally, disturbed behaviour may persist for longer periods and for this kind of patient most of the larger psychiatric hospitals have special wards which need not be closed if appropriate and continuous observation is available. A number of hospitals find it possible to supervise such patients in groups and to take them to occupational and other activities thus avoiding keeping them in a closed ward continuously.

These advances in treatment make it much more practicable for psychiatric patients to be cared for in general hospitals, at least for intensive treatment and initial rehabilitation for periods of up to 6 months stay. The revival and further development of this practice is therefore bound to find much wider acceptance than was the case in the past.

The observation ward

In England and Wales a number of psychiatric units in general hospitals have evolved directly from the "observation wards" which under the Lunacy and Mental Treatment Act of 1890, enabled a mentally ill person to be temporarily detained while arrangements for treatment were made. The need for the observation wards arose because of the inaccessibility of many psychiatric hospitals and it was the accessibility of these wards that made them an obvious first choice for transformation into psychiatric treatment units. A large proportion of the 5,000 general hospital beds that are at present available for psychiatric treatment originated in this way.

Psychiatric units for psychosomatic disorders

Before psychiatric treatment was sufficiently advanced to control more disturbed behaviour, it was often advocated that psychiatric units in general hospitals should deal with psychosomatic disorders or illness with a psychosomatic component only, such as asthma, peptic ulcer, ulcerative colitis, dermatological disorders, etc. Units for such disorders were thought to need not more than 20 beds and, at that time, a psychiatric area service was not yet thought of. Some units of this kind are still operating.

Intensive treatment units

Advances in treatment and the passing of the Mental Health Act, 1959, have encouraged the growth of intensive treatment units in general hospitals. The length of stay of the majority of patients using such units is usually about 5 weeks. At present about 5,000 beds for mental illness are available in general hospitals and the Hospital Plan envisages the addition of about another 4,000 by 1972–73. These beds are to be provided in district general hospitals in areas where accessible comprehensive psychiatric hospitals do not exist. To allow for proper classification these units will normally require 60 or more beds but smaller units with about 30 beds may be appropriate for less densely populated areas or where sites are restricted.

Comprehensive units for intensive treatment and initial rehabilitation

Wherever existing psychiatric hospitals are particularly far away from the population they serve, units with 60 beds for intensive treatment and 100 beds for initial rehabilitation (*see* Building Note 30 1963) are recommended. Such units are particularly suitable for densely populated areas so that they may be accessible to a population of about 250,000.

Some advantages of the general hospital unit

Perhaps the most important point in favour of treating psychiatric in-patients in general hospitals is that this is what the majority of patients prefer. Their reasons for this preference are the easier accessibility of most general hospitals and the absence of stigma. Psychiatric out-patients have been able to attend general hospitals for the last thirty years. There has been a steady increase in the demand for this kind of service and it is likely that in making it easier for mentally ill persons to come for advice and treatment, they were encouraged to come earlier and the results were correspondingly better. There are still many people who fear the conventional mental hospital and they may refuse to be treated there until their illness reaches a stage at which compulsion must be used. If beds in general hospitals were provided for those who must have in-patient care, their earlier and more effective treatment might well reduce the length of stay in hospital and the total number of beds required.

On the organisational side, the small, active unit related to a convenient, defined catchment area is in a position to offer a far more effective service both for intensive treatment and, through the local authorities, for prevention than could be expected from most of the large, comprehensive hospitals. In this connection the term "catchment area" is often misunderstood as implying a rigidly demarcated zone from within which the hospital or unit must accept anyone who presents for treatment and, conversely, is debarred from accepting anyone from outside. To some extent this was the case before 1960, but the Mental Health Act has made it legally possible for any hospital to accept psychiatric patients if it has the facilities for their treatment. The catchment area in this context connotes more the population for which the psychiatric staff of the unit have a general responsibility for the total mental health care whether it be for mental illness or for subnormality. This should include advising the health departments of Local Health Authorities on the supporting community services and making personal contact with general practitioners and voluntary agencies.

The basic obstacle to running this kind of service from most comprehensive mental hospitals is their geographical position. Because their function was chiefly custodial they were sited in remote areas where land was cheap and for the same reasons they were usually very large. Then again the custodial function dictated an hierarchical organisation in which the ultimate responsibility both for the protection of the public and of the patient was vested in one man. Such a combination of factors led to the growth of an institutional atmosphere and to the inhibition of therapeutic effort.

Some of these disadvantages can be modified: the hospital may be divided into almost autonomous sections each of which, under the control of a medical team, is responsible for a section of the catchment area. Such a redistribution of services has only been possible since the 1959 Mental Health Act removed the necessity for a single officer holding responsibility for the discharge of custodial functions and substituted the concept of the "responsible medical officer". Such developments at best provide makeshift solutions to some of the problems of the conversion of the traditional mental hospital to contemporary function, they do not appear capable of providing advantages comparable with those of the general hospital unit as these can be provided in their place.

There are however a small number of well sited, comprehensive psychiatric hospitals, ranging in size from 300 to about 700 beds and it may be possible to reduce the size of some of these still further. It has been claimed that this type of hospital is superior to the general hospital unit because of the greater opportunities for classification that larger size and more space allow and, because for

the same reasons, it has better facilities for occupation and recreation. But the assumption that these qualities are universally beneficial is open to challenge. For example, there are certainly administrative advantages in being able to segregate troublesome patients, but it is also true that many disturbed patients respond to the challenge of controlling themselves in a well-behaved group and they should not be denied the opportunity to do so.

Similarly the hospital with a large range of occupations and recreations to suit the tastes of its patients, runs some risk of encouraging their dependence upon its facilities when it should be training them to seek such activities in the community.

Between these extreme views there is, of course, much common ground but the evaluation of any form of care is a matter for experiment, observation and measurement; until experimental models are available for study, the advantages of one system over another must remain a matter of opinion.

The links with general medicine

Segregation is at least as bad for psychiatrists as it is for their patients. Particularly in a branch of medicine that lacks a generally accepted theoretical background, frequent reviews of the basic assumptions that underlie diagnosis and treatment are essential. The psychiatrist who is exposed to the challenge of re-thinking and re-formulation by his colleagues in other specialties, is less likely to be accused of verbal obscurity by his patients and other doctors. This kind of constructive relationship cannot be achieved through the exchange of case notes or brief contacts during out-patient sessions. Though it will take time, the psychiatrist with beds in the general hospital must be prepared to educate his colleagues as they will undoubtedly educate him.

Apart from the general benefits that would accrue from the exchange of ideas between psychiatrists and other specialists, there are particular advantages to both in being able to get a consultant opinion quickly and in having opportunities for meeting and discussing individual patients.

Possible difficulties

Most of the objections to the practice of psychiatry in general hospitals stem from the allegedly insurmountable differences between mental illness and the rest of medicine. It is said that a therapeutic atmosphere favourable to the mentally ill cannot be achieved in a general hospital where the free will of the patient must be controlled to some extent by the procedures of scientific observation and treatment. Also that the routine and close control of the medical and surgical wards will be actively harmful if applied to psychiatric patients, many of whom require a permissive régime that encourages the growth of independence.

The fear has also been expressed that attempts to treat disturbed, compulsorily detained patients in a general hospital would lead to the imposition of restraints which would not be necessary in the traditional mental hospital. Without such restraints, either pharmacological or mechanical, the ordered routine of the general hospital would soon be thrown into confusion.

It cannot be denied that there is some substance in these views and ten years ago, they would have been difficult to rebut. Moreover, as has already been mentioned, the early attempts to bring psychiatry into the general hospital were not always beneficial to the patient. This was because fear, prejudice and legal strictures enforced an isolation which counterbalanced many of the potential benefits of close association with other specialties. But times have indeed changed and, thanks largely to quick and effective methods of treatment, it would be just as wrong for general hospital staff to expect the mentally ill to behave like lunatics, as it would be for psychiatrists to imagine that the routine of general hospitals is still as strict and at times insensitive as it sometimes was when they were students.

It is true that persons beset by anxiety, fear and depression, the common accompaniments of mental illness, require a full measure of personal understanding and that, if this is denied them, they may resort to primitive and socially unacceptable methods of self expression. It is, however, becoming increasingly clear that understanding, explanation and reassurance are necessary for the proper management of physical as well as mental illness and that, at least in this important respect, the needs of the physically and mentally ill are closely similar. It would indeed be extraordinary if the similarities between two groups of human beings from the same society did not outnumber the differences. And the physician's duty is as much to recognise and support that which his patients have in common with each other and with the healthy as to eradicate or change that which is different or pathological. There is little doubt that psychiatric patients will benefit from association with those who are mentally stable but it is not unlikely that, in the long run, those features of the management of patients in psychiatric hospitals which are good will with advantage be incorporated into the general hospital routine.

A split service

A constellation of difficulties is centred on the necessity, at least temporarily, to provide for the rehabilitation of long stay patients apart from those needing short term, intensive treatment. For until their numbers and clinical needs can be more clearly defined, it would be rash to build anew for the long stay patients of the future. This means in effect that the new general hospital units will carry out intensive treatment and some short term rehabilitation while the existing, comprehensive mental hospitals continue to provide long stay rehabilitation and, in some cases, accommodation for those who require treatment under some degree of security.

Many psychiatrists and nurses at present working in mental hospitals are afraid first, that general hospital units will, by accepting only selected patients and shedding the less promising ones, establish an élite of psychiatry dealing only with the intensive treatment of early, recoverable patients to the detriment of the service as a whole. Secondly, that the matrons of general hospitals will prefer to staff the psychiatric units with their own nurses rather than those trained in the mental hospital.

If these fears are realised the comprehensive mental hospital will be in danger of filling up with the rejects of the general hospital unit; psychiatrists will be unwilling to work there and a second-class service will result. If, at the same time, its nurses are debarred from serving in the general hospital and the psychiatric experience of the nurses there is limited to a selected sample of patients, the standard of psychiatric nursing will fall and the patients will suffer.

The risk of such harmful developments will vary with local circumstances; the reputation of a mental hospital does not depend upon the variety of the work it undertakes but on the way it does it and upon its results. Although most of the best mental hospitals contain a high proportion of long stay patients, they still attract doctors and nurses by the quality of their work and teaching. Such a hospital will be a valuable support to the general hospital unit in providing an extended range of treatment for its patients and experience for its doctors and nurses.

Such fears would have little meaning if two principles were observed: first, that the psychiatrist who accepts a patient for treatment should be responsible for that patient so long as he continues to require psychiatric attention. This would mean in practice that the consultant who first admitted a patient to hospital would continue to care for him in whatever section of the hospital he might be, and that each consultant's team would normally have patients undergoing both intensive treatment and rehabilitation wherever it was being carried out.

The second principle is that every psychiatric nurse should have a rounded experience of psychiatry, which means that nurses in training would need to serve both in the general hospital unit and in the comprehensive psychiatric hospital.

Many issues affecting the design, management and staffing of general hospital units await definition in the light of experience. In the meantime it is to be hoped that traditional attitudes will be subordinated to the need for experimentation and that administration will adapt itself to the pattern of the new service rather than attempt to dictate what form it should take.

XII

SOCIAL WELFARE

The year has seen much activity in the training field and in particular the award, by the Council for Training in Social Work, of the Certificate in Social Work to the first 56 students (most of whom were seconded by their local authorities) who successfully completed training. The general welcome extended to these newly qualified workers by established social work organisations has been most encouraging.

The provision and standard of courses has been a major concern of the Council for Training in Social Work, now under the Chairmanship of Sir Charles Morris. Ten courses of two years' full-time study and one special course of a year's full-time study were in being at the end of 1963. In addition the Council approved in principle the promotion of more one-year courses to enable older officers to re-enforce their experience with a period of full-time training. It has also agreed to consider the needs of some younger officers (i.e., those over 30 with five years experience) who cannot for some special reason undertake a two-years' full-time training. Much thought is going into the development of the new training and to ways of providing essential practical work. To help meet the shortage of suitable placements, the National Institute for Social Work Training has started a study of practical training facilities and is also currently planning a project on in-service training.

Patterns of training designed to meet a variety of needs are therefore evolving, though as yet slowly in view of the mounting demand on community services which now support many who in earlier years would have had no alternative to hospital or institutional care.

Not all who use the health and welfare services require social work help but some clearly do need more than just the knowledge that a service is available or encouragement to use it. The existence of a problem or a difficulty does not ensure that help is sought, nor does the existence of a service guarantee that the solution it offers can be used. Some people require assistance in clarifying their difficulties and in facing the decisions involved. Many family situations and some problems associated with mental disorder fall into this category; in others where there may be a deteriorating physical or mental condition, social work can give support in recurring difficulties and in enabling toleration of a situation than can be alleviated but not cured.

For good service to the client or family and for rational and economical use of skilled staff, it is essential that there should be close working relationships between social work services and constant regard to co-operation with colleagues in medical and nursing fields. Training is the key to progress in ensuring that social work plays its part adequately, both as a service that is capable of solving some problems and as an element in the overall pattern of services that benefit the health and welfare of the family.

Early in the year the importance of a balanced development of services was the theme of the ten year plan "Health and Welfare: the Development of Community Care", which suggested some of the aims which should govern future planning, and some tentative standards which might be adopted. In drawing attention to the need for study in a number of fields, particular emphasis was laid on the realisation that these services should be so organised and administered as to meet more precisely the varying needs of groups of people in need of services and even of different individuals within the groups. Some of these groups, of particular interest in the social welfare field during the year, are noted in the remainder of this chapter.

The mentally subnormal in the community

During 1963 the provision of training and social care for the mentally subnormal has continued to increase in quantity and in scope. More training centres have been opened for adults and children and the aim is to provide an environment in which each individual can develop and use his capacities to the limit.

Early diagnosis and assessment of the degree of subnormality and of any associated physical defects is of primary importance so that treatment, if practicable, can be given and training can be started as soon as possible. It is now recognised that many severely subnormal children have potentials beyond those previously expected and aptitudes must be detected so that the child can be helped to make use of those capacities which will lead to a more active and purposeful life. Some training centres now include diagnostic units for this purpose and local authorities are encouraging the attendance of more young children at an early age; in some cases children, markedly subnormal from birth, are brought to the centre at about three years of age. Parents co-operate more readily when they see available for their children nursery units with well designed rooms such as there are in many of the new purpose built junior training centres.

Many local authorities are now making special provision for the care of subnormal children with severe behaviour problems, or with grave physical handicaps, in small units attached to junior centres. Such provision helps to relieve the burden on parents, and many of the children benefit from the close individual contact with staff and from the remedial activities, sometimes including physiotherapy, which can be provided, often in co-operation with a hospital.

It is now generally accepted that junior and adult centres are best established in separate premises where the differing needs of the two groups can be met in surroundings acceptable to those using them and to their families. While there is a need for flexibility in the decision on the age for transfer of any individual from the junior to the adult centre the two broad functions of "school" and "work" should be kept apart. Whilst the child has to be given conditions to enable him to learn to live happily as a child and to prepare him for adulthood there is evidence to show that the adult fares better in a more sophisticated environment where he is accepted as "a grown-up person" and where training is appropriate to his mature status. Through the work in adult centres much has been learned about the potential for industrial output of both adults and adolescents but the need for social training to enable them to use leisure to take part in activities in the community is equally important.

New trends in methods of training, including the recognition of the value of activity in smaller groups, has made it more important to have staff in greater numbers and with suitable qualifications. This problem is by no means new, it was considered by the Scott Committee whose recommendations led to the setting up in 1963, of a Training Council under the Chairmanship of Lady Adrian, to promote and approve courses of training for the staff of training centres for the subnormal, including those in hospitals. Staff in centres can also be helped and advised by specialists in the field of education. In some centres, for example, special staff have been introduced to help the few children who can acquire some skill in reading, and educational classes can be provided for adults who can benefit.

Experienced staff are also needed in hostels, more of which are now being provided by local authorities for those attending training centres. Where it is geographically practicable "five-day hostels" have been found particularly useful as these allow residents to maintain contact with their homes at weekends.

The over riding need of the mentally subnormal is for human companionship and social activities. Though development here is difficult and slow, largely because subnormal people do not learn quickly how to participate in activities outside the centres they know, a very worth-while contribution is being made by voluntary organisations in providing clubs. Local authorities too are designing new adult centres so that the premises can be used for club activities. Educational outings, practical instruction in using public transport, encouragement of hobbies and group activities are all features in the programmes of progressive centres.

Social work with families

Signs of growth in the general concept of work with families in the health and welfare services can be seen in the more general consideration given to the problems of adults, as well as children, in the context of their families, and to a wider acceptance of a broadly based family case work approach to situations affecting different aspects of family life. This broad development, in line with much of the discussion in the Younghusband Report on the rôle of social work with families in a health and welfare setting, will no doubt receive further impetus from the gradual increase in trained social workers in the services, either returning from training or directly recruited. There is still little evidence, however, that the importance of constructive work with fathers of families in serious difficulties is appreciated, except by Family Service Units.

The expansion of health and welfare services summarised in the plan for the Development of Community Care recognises the contribution of voluntary organisations in many fields. Local health and welfare authorities owe much, in developing social work services for families, to the example and experience of voluntary effort, and notably to Family Service Units in work with "problem families". Family Service Units has grown in size and influence in the fifteen years since its inception without reducing either high standards of work or a record of co-operation with health and welfare departments.

In less acute situations, indications of the need for combined help from several different services can often present a real challenge. Recognising that there is still much to be learned about criteria for successful combination of work in the field, three experienced voluntary casework agencies in London have recently set up an experimental project financed by the City Parochial Foundation. The Family Centre of Hackney and Stoke Newington, established by Family Service Units, the Family Welfare Association and the Invalid Children's Aid Association, aims at establishing those needs of families which can be met by casework, and in addition how far there is also a need for specialised help. It is hoped, too, to discover what each of the separate organisations has to teach the other and whether, by working together, they can work with greater efficiency and make it easier for their clients to get help.

The Children and Young Persons Act, 1963, has been generally welcomed as an aid in those situations deteriorating to a point at which there is a risk of children having to be taken into care. Section I gives authority for the performance and co-ordination of preventative work and provides a statutory focus of responsibility to ensure that action is taken to give both timely and effective help. Home Office Circular 204/1963 makes it clear that the new powers will not disturb existing arrangements which are working satisfactorily, and it is hoped that in practice the work will be done by the officers of whichever service may be most suitable in a particular case. Since the Act came into being many health and welfare committees in consultation with children's committees have begun to review present arrangements. There seems likely in future to be a variety of administrative patterns and of arrangements for use of field staff. Whatever pattern may be thought appropriate to particular authorities there is little doubt that the opportunity for constructive work of a kind that is often greatly needed will be fully taken up in many areas.

The partially sighted

The emphasis given during the year to developing services for the partially sighted has been seen, and generally accepted, as a logical development of the growth of services for other groups of handicapped people and also as an encouragement to take a wider view of the needs of people with partial sight. This trend is in line with the distinction drawn earlier in the education and employment fields between the partially sighted and the blind, a distinction due in the main to changes in medical knowledge and treatment which now aim not only at protecting residual sight but also at using it, unless there are medical indications to the contary.

In the welfare services provided by local authorities the traditional link with the care of the blind was initially a logical one, and it was appropriate also that the home-teacher, the only social worker in the community with a training which equipped her to work with the blind, should have played a major part in providing a service for the partially sighted. It is only in recent years that increased understanding of the social effects of the disability and better assessment of need have shown that other forms of social work help may sometimes be required.

The issue of Circular 4/63, "Welfare Services for the Partially Sighted" helped to stimulate discussion about the services required by the partially sighted of all ages, and to bring together workers from the educational, employment and welfare fields. As in other contexts, meetings of this kind show clearly that problems arising from a specific disability cannot be considered in relation to any one group of statutory responsibilities alone. These discussions have been important also in emphasising the particular problems of the partially sighted adolescent, and the partially sighted school leaver who has also other handicaps. The need for hostel accommodation for young partially sighted girls undergoing training or working away from home is only one example of the matters raised. Another, on which attention is likely to be increasingly focused in future, is the extent of the many problems—social, emotional and in the employment field—which face handicapped school leavers, whether or not their sight is also affected.

The Circular has been generally welcomed and local authorities are now in a position to consider whether some persons on their register for the partially sighted might not benefit from one or more of the services provided for the physically handicapped. In surveying the position it has been apparent that the first step of authorities considering amendments to their schemes has been to find out whether partially sighted people already registered and receiving services linked with blind welfare wish to continue under existing arrangements. In the main, having benefited from a helpful relationship with the home-teacher, and participated in social and other services, the majority of the partially sighted seem anxious at this stage not to break existing links with services designed for the blind. It seems likely that services for the physically handicapped will have to develop further, to the point of being more readily seen as appropriate for the partially sighted, before there is any great change in use by those already on the registers.

The position may well be different with new registrations. For those who may lose their sight, the skill and knowledge of home teachers will be required to help with adjustment to permanent disability and to ensure continuity of service. For those who are not likely to become blind the help needed may relate more to the social problems of disability and less to the special difficulties of defective vision. The present stage is therefore a further step in the process of identifying and working out needs and envisaging training requirements of the future. Training developments, referred to elsewhere, have also underlined the importance of re-examining the deployment of staff and the structure of the social work service as a whole. It is not easy for local authorities to plan a sound professional structure until the future training pattern for work with special groups is defined. Here, as in other social work services with similar problems, field staff may become discouraged about their future rôle. It is all the more important that every opportunity should be taken of clarifying functions and special requirements, and that staff should feel assured that their contribution is of real importance in this process.

The elderly

Discussion, consultation and study on almost every aspect of the care of the elderly, whose needs touch so many of the social services, was a feature of 1963. One aspect which became of special significance was the extent to which statutory and voluntary effort could be used, in circumstances of exceptional difficulty, to provide maximum help and support in the community. The hard winter of early 1963 threw into relief the special needs of many elderly and infirm people living in isolated conditions, and even the normally independent are at risk when faced with such difficulties. The domiciliary services of all kinds were frequently taxed to the limit of their capacity, since in some areas travel other than on foot was impossible. Snow clearance, deliveries of fuel and other necessities and, in particular, the maintenance of a meals service became in some parts of the country a real test of endurance for the workers, as well as a cause of grave anxiety to the recipients. The very greatest credit is due to all who laboured to keep the services going at this time. The importance of the meals service was fully brought home in many places and almost everywhere an intensive drive has since been made to improve and develop the service.

Reference was made last year to the growth of projects for day care in centres, or in association with a residential home. This trend has continued and other schemes of a similar kind have started during the year. Experience of those linked with a residential home confirms the necessity for careful planning beforehand if the right environment is to be selected, and the purpose of the scheme is to be appropriate in relation to staff time, capacity and interest. If the home is fulfilling its true function an influx of people daily may not be acceptable to residents and their interests may be pushed on one side. Arrangements for day care should, it seems, be informal, numbers should be small and it is clearly essential to employ adequate, and usually additional, staff to stimulate activity, especially on the occupational side. These schemes are new and can be seen to meet a certain need: as the novelty wears off, however, it will be important to note the effect not only on residents but also on those attending, for example, in the effort of preparation at the beginning of the day and the return home at the end. For those living alone some additional service at home such as the lighting of a fire may well be necessary.

From time to time discussions have taken place about the possibilities of a form of day care for elderly people in their own homes, sometimes referred to as "day sitters-in". The report of an experimental scheme started in London in 1961 has recently been published by the National Council of Social Service on behalf of the London Council of Social Service. The Day Care Service in St. Pancras for the aged and infirm in their own homes has provided individual and personal care over a period to keep elderly people who live alone as well in spirit and in health as possible. This service, organised by a social worker, and based on a good neighbour plan of care, in co-operation with home nurses, home helps and, in some instances, meals on wheels, has met a variety of needs such as temporary help while awaiting admission to hospital, or a residential home, and has also assisted temporarily until relatives could take over or make other arrangements. The scheme, which has proved most valuable, is now to continue for another two years, thanks to the generosity of the City Parochial Foundation, the London County Council and the Metropolitan Borough of St. Pancras.

The development and strengthening of the domiciliary services continued during the year but much still remains to be done, particularly with the home help service. The growth of special housing and flatlet schemes for the elderly, although steady still falls short of demand. Because increased support at home both medical and social, and expanded provision of special housing sustain independence longer those now admitted to residential homes are both older and more infirm than in earlier years. It is well known that today the age of residents is often in the 80's and 90's and sometimes 100's and, in general, they constitute a group who are very much more frail physically and mentally than was envisaged in 1948: a proportion are also mentally confused. The changing type of care required in consequence, and the changing function of homes has brought problems of staffing and staff shortages as well as questions concerning the design of homes. In spite of many difficulties local authorities are nevertheless making

determined efforts to close those former Poor Law Institutions which remain and a significant number have now decided to reduce the overall size of their purpose built homes. Some, as noted last year, are experimenting in small units for 10–15 residents and others are developing unit planned homes. These are increasingly seen to have possibilities in providing care for residents who have become very frail or mentally confused so that they can be grouped together without disturbance to others. So far, however, staffing of these units has not generally been planned on a group basis though this is an essential element if a unit is not to suffer segregation. These themes of the nature of the care required, of staffing, and of design will demand close attention in the coming decade for which local authorities and hospitals are already revising their plans.

XIII

HEALTH IN WALES

The Report on Developments and Government Action in Wales and Monmouthshire 1963 (Cmnd. 2284) indicated noteworthy developments in health matters. Statistics about the work in the hospital, the executive council and the local health authority services and the gross expenditure on the National Health Service from 1951 to 1963, together with statistics relating to infectious diseases, including tuberculosis, are contained in the Digest of Welsh Statistics, No. 10, 1963.

Maternity and Child Welfare

Vital statistics

The relevant statistics are shown in Appendix D to this Report.

Perinatal mortality

In comparing the fall in the perinatal mortality rate over the last 32 years, the figure for England and Wales has fallen to 47 per cent of the 1931 rate, whilst that for Wales has fallen to 42 per cent. There is still, however, a significant difference between the rate for Wales and that for England and Wales. A survey of the maternity services within Wales is proceeding with particular reference to the liaison between hospital and community services. It is to be hoped that the focussing of attention on the maternity services will help to eliminate in the future the adverse situation in the Principality.

TABLE XIII·1

Perinatal mortality per 1,000 total (live and still) births

	1931	1941	1951	1959	1960	1961	1962	1963
England and Wales ..	62·1	54·7	38·2	34·1	32·8	32·0	30·8	29·3
Wales	80·9	65·7	42·5	42·2	39·1	36·7	36·1	33·7

Maternal mortality

Sixteen mothers in Wales died in childbirth, a maternal mortality rate of 0·33 per thousand births. The rate for 1962 when there were 19 deaths was 0·41.

Dental Health Services

The overall shortage of dental practitioners and their uneven distribution in relation to population, factors referred to in previous reports, have without doubt had their effect on dental services in Wales. Even so, in some areas the services may be said to be functioning at a satisfactory level. The shortage of dentists will it is hoped be gradually remedied as the provision of increased numbers of places at dental teaching schools, particularly the new School at

Cardiff, begins to show results, but this is necessarily a long-term project and improvement can only be gradual. To be sure of an adequate income a dentist must set up his practice in or near a centre of reasonably large population, and this often means that patients living in rural areas are unable to obtain dental attention except by travelling long distances and usually at considerable expense.

So far as the general dental services are concerned it is pleasing to report that comparatively few complaints from patients are being received, and these relate principally to dentures where in many cases an amicable solution is reached by the denture conciliation committees set up by the local executive councils. Some increase has been noted in the number of cases referred to dental service committees by the Dental Estimates Board for further investigation, where it is alleged that the treatment completed under the service is not of a satisfactory standard; it is fair to say however that these cases still form a very small minority, and the vast majority of courses of treatment completed are entirely satisfactory and reflect a high ethical standard on the part of the dental profession.

Many of the local health authorities in Wales continue to provide a substantial amount of dental treatment for the priority classes of expectant and nursing mothers and young children. The authorities are of course limited in their efforts in this direction by the shortage of school dental officers—who are also faced with the problem of dealing with high numbers of school children requiring inspection and treatment—but despite their difficulties it is hoped that it will be possible for even more of the local health authorities to increase the allocation of time devoted by their dental officers to the dental treatment of the priority classes of patient. In particular the early inspection and treatment of young children of pre-school age pays substantial dividends in the prevention of premature loss of the deciduous dentition, and forms a most valuable foundation for the encouragement of regular dental attention in later life.

The provision of dental services in hospitals is at present under review and it would be premature to make undue comment regarding this aspect of the services; here again however the limiting factor is the shortage of dental manpower and no doubt any future increase in the number of dental graduates available will also be reflected in the numbers choosing to make the hospital dental service their career.

Development of the Hospital Service

Since the Appointed Day there has been a steady and substantial improvement in Wales in the standard of hospital accommodation and in in-patient and out-patient diagnostic and treatment facilities, with a general strengthening of specialist services and medical staffing. Changing needs and circumstances have called for such adjustments as the provision of extra beds, variation in their allocation and greater flexibility in their use, the rationalisation of appropriate specialties, more domiciliary visits by consultants, and direct access to X-ray and pathological departments by general practitioners.

Some indication of the increased volume of work and better use of beds is shown by comparing the 1962 annual hospital statistics with the corresponding figures (in brackets) for 1949, the first complete year after the inception of the National Health Service. The total bed complement in Wales is 28,403 (25,942), the average daily occupancy 22,620 (21,257), and the number of in-patients

241,697 (149,534); the turnover interval 6·95 (7·6) days, and the admission waiting list 22,389 (37,829). The bed complement for infectious diseases was reduced to 438 (1,479) and the number of beds allocated to tuberculosis declined from 2,879 in 1949 to 1,734 in 1961—the last year for which separate figures are available. The bed complement for mental disorder was increased to 11,471 (9,974) and for maternity to 1,283 (1,060). Increased activity in out-patients' departments is reflected in the number of new out-patients 361,586 (290,370), in total attendances 1,320,373 (936,830), and in the weekly number of clinic sessions 1,215 (906). The comparable amount of radiological work is 1,467,398 (436,533) units, pathological work 1,189,533 (420,720) units and physiotherapy 2,035,242 (962,689) units of treatment.

Over the past fifteen years there has been an extensive programme of hospital up-grading, extension, reconstruction and adaptation and of major new building. Among the earlier schemes were the reconstruction of an ex-American hospital near Cardiff to provide orthopaedic beds (280) and the necessary ancillaries, the adaptation of a hutted hospital at Chepstow as a plastic surgery unit (150 beds) with the later addition of a burns unit (29 beds), and the building of a new maternity hospital (91 beds)—recently extended by 25 beds—adjacent to the Cardiff Royal Infirmary. Additional accommodation was provided for the mentally subnormal at Hensol Castle Colony (210 beds), at Oakwood Park Colony (200 beds), at Ely Hospital, Cardiff (100 beds) and a new hospital has been built at Llanfrechfa Grange (500 beds). Extra accommodation for the mentally ill includes a new villa for 50 female patients at Denbigh, a 24-bed unit at Colwyn Bay for seriously maladjusted children, a 44-bed admission unit at Caerleon, a hospital for the sick (100 beds) at Carmarthen Psychiatric Hospital, and a day hospital treatment centre at Swansea. A radiotherapy centre (98 beds) has been built near Cardiff with two cobalt units and, more recently, a linear accelerator. Major extensions have been undertaken at hospitals at Bangor, Bridgend, Morriston and Llanelly and large-scale works carried out at several hospitals to improve maternity, premature baby and geriatric units, operating theatres, out-patients', X-ray, and pathological departments. New base hospitals are being built at Singleton Park, Swansea (809 beds) and at Glangwili, Carmarthen (396 beds), and the reconstruction of the Royal Gwent Hospital, Newport (852 beds) and the construction of a new district general hospital at Aberystwyth (310 beds) have begun. Work is in progress on the Dental School, the first instalment of the new University Hospital of Wales (782 beds) at Cardiff.

Nursing Services

Midwifery

The continued shortage of midwives in Wales is a source of concern, and was the reason for making a review of trained staff at maternity units and in local authority service, and of the available training facilities within the Principality during the past three years. This survey was chiefly directed to the age structure, the wastage and the changing appointments within the profession.

TABLE XIII.2

Age distribution of midwives in Wales

Age group	% of hospital midwives in Wales	% of L.A. midwives in Wales	% of total midwives in Wales	% of total midwives in England and Wales
under 30	30·5	12·2	20·6	25·9
30–39	22·3	17·4	19·6	23·7
40–49	26·1	26·4	26·4	24·4
50–59	17·7	36·0	27·6	21·5
60+	3·2	8·0	5·8	3·8

Table XIII.2 clearly indicates the higher average age of the midwives in Wales compared with England and Wales, and in particular how this is marked in the case of the local authority midwives.

The following tables illustrate how the local health authorities have failed to maintain their establishment of midwives.

TABLE XIII.3

Local authority losses of midwives 1961–1963

To hospital midwifery posts	To non-midwifery nursing	Marriage and pregnancy	Family and personal	Death and retirement	No reason stated	Total
12	25	29	37	71	2	176

These losses, of which departures through retirement and death constitute 40 per cent, must be viewed against a total establishment in 1962 of 617 midwives.

TABLE XIII.4

Sources of recruitment of local authority midwives 1961–63

From hospital maternity units	From Part II training schools	From other nursing services	Housewives etc. returning to service	Previous post not known	Total
64	51	9	22	7	153

Of these 153 entrants 33 per cent came from Part II training schools; nearly four-fifths of the newly qualified midwives entering practice in Wales choose hospital midwifery. The midwives now entering local health authority service are most either midwives leaving the hospital service, or housewives and others re-entering midwifery practice after an interval.

During this triennium only 153 trained midwives entered the local health authority service as against 176 departures. Although latterly the domiciliary confinements have been slightly fewer, there is of course the increasing load on the midwife in nursing patients who have been discharged early from hospital. Furthermore there is a limit to the size of an area which a midwife can effectively serve.

It is less easy to draw a picture of the hospital staffing position, where there appears to be a balance of midwives gained (60) during the period 1961–63. The advantage is more apparent than real, because a considerable proportion (30 per cent at the time of the survey) were only able to render part-time service and there has been a steady increase in hospital confinements. An index of the staffing difficulties is the call made on agencies (6·9 per cent) by the hospital authorities.

TABLE XIII.5

Sources of recruitment of hospital midwives 1961–1963

From Part II training schools	Transfers of experienced hospital staff	Staff needing initial refresher training
191 44·2%	164 38%	77 17·8%

Table XIII.5 indicates that a considerable proportion of the staff joining the hospital units are of recent qualification or are in need of prior refresher instruction before resuming midwifery. In addition it should be borne in mind that the turnover in trained staff in these units in a period of one year represents over a quarter of their total establishment, and this at a time when the hospital maternity units are faced with a heavier load than at any previous time in their history.

In 1962 out of 148 pupils in Welsh Part II training schools 139 qualified as midwives but less than 100 entered active midwifery practice.

On reviewing the midwives who have left the local authority and hospital service it is calculated that there is an annual loss of approximately 150 from midwifery practice. Since there are insufficient pupil midwives in Wales after qualification to maintain the existing establishment it is necessary to rely on midwives returning to such work after an interval and for the balance, to depend upon midwives entering or returning to Wales.

Home nursing

The home nursing service of the local health authorities works in close collaboration with the general practitioner service and the statistics give an indication of the part it plays in the medical care of patients. In 1962 the local health authorities in Wales employed the equivalent of 568 whole time nurses (0·21 per 1,000 population) whereas in 1949 they employed 434 (0·17 per 1,000 population). The Plans for the Health and Welfare Services in Wales anticipate a ratio of 0·26 per 1,000 population in 1972. It is probable that geographical conditions account for the increased staffing ratio as compared with England.

Although the number of staff has increased steadily the number of visits carried out by home nurses reached a peak of 2,210,682 in 1957 and has subsequently fallen so that in 1962 the visits made numbered 1,982,572.

There is evidence of a slowly changing pattern in the type of care provided. The prescribing of oral insulin and antibiotics and the reduction in the number of tuberculous patients being treated at home has resulted in the saving of home nurse visits. On the other hand, an increasing number of visits have been made to patients over 65 years of age. In 1953, visits to this older group accounted for 38·8 per cent of all visits (28·4 per cent of patients) but in 1962 this had risen to 58·2 per cent of all visits (39·4 per cent of patients). It must not be assumed that a reduced number of visits has decreased the work of the home nurse. It is somewhat surprising to report that in spite of an increasing tendency to discharge patients earlier from hospital there has been no increase in the number of surgical cases treated by home nurses (18·4 per cent of visits in 1962 compared with 24·8 per cent in 1953). This would suggest that there is the possibility that greater use could be made of home nurses to facilitate the early discharge of patients and thus result in a saving of hospital beds or that the type of patient now discharged from surgical wards needs less nursing care.

Infectious Diseases

Typhoid

Eight cases of typhoid were notified in Wales during the year, seven of which were almost certainly infected abroad. Four cases occurred aboard a foreign cargo ship which docked in a South Wales port. All the other members of the crew were examined and specimens obtained for laboratory investigation were negative for typhoid, but one case of paratyphoid B came to light.

Paratyphoid

Thirty cases of paratyphoid were notified in Wales during 1963. These occurred almost entirely as single cases. The only episode of any epidemiological interest was one involving three school girls and the father of one of them. Exhaustive enquiries failed to identify the source of infection. The organism was type Taunton in each case and the girls were regular consumers of shop confectionery.

Poliomyelitis

Six cases of paralytic poliomyelitis were notified but subsequently the corrected notification totalled four. In only one of these cases was the virus isolated. In two instances oral vaccine was given to contacts and to all children living in the vicinity.

Diphtheria

No cases of diphtheria were notified in Wales during 1963.

Food poisoning

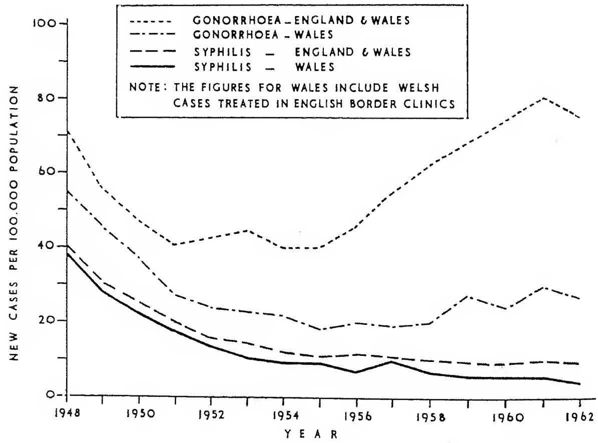
An outbreak of food poisoning started at a holiday camp during the first week of the holiday season and went on for a period of seven weeks. The total number of persons known to have had symptoms (i.e., severe enough to attend the camp surgery) was approximately 500 out of a total number of around 7,000 campers. Symptoms generally followed a chicken or meat meal but this was not always the case. Extensive bacteriological investigation proved negative for everything except one sample of frozen chicken which had a heavy growth of heat resistant *Clostridium Welchii.* Twenty of the thirty-one members of the kitchen staff examined were shown to be carriers of *Cl. Welchii* although many of them had been symptom-free throughout. *Cl. Welchii* was also isolated from the stool of a small number of patients and in the absence of any other organism it was assumed that this was the causative agent. The method of meat preparation appeared to encourage the spread of infection in as much as meat was partially cooked on the day prior to consumption, stored under somewhat unfavourable conditions and sliced and reheated just prior to the meal. Advice was given by the Medical Officer of Health as to the cooking and storing of meat and meat dishes and this may have helped to eliminate any further outbreaks.

Venereal Diseases

The graph indicates the incidence of new cases of venereal disease in Wales compared with England and Wales as a whole. The general pattern in Wales is similar but the incidence is consistently lower and there has not been such a sharp rise in gonorrhoea since the middle fifties. It is probable that there has not been a comparable influx of immigrants from overseas to Wales as there has been in England and this may well be an important factor in the difference in venereal disease statistics.

In reviewing the figures it is necessary to point out that they relate to patients attending venereal disease clinics and take no account of patients who have received treatment from their general practitioners. No statistics are available from such sources as venereal disease is not notifiable. There is however, no reason to believe the general practitioners treat a higher proportion of the cases in Wales than in England.

VENEREAL DISEASE – NEW CASES
1948 – 1962



Tuberculosis

In 1963 there were 942 formal notifications of respiratory tuberculosis (354 per million population) whereas in 1953 there were 2,949 such notifications (1,137 per million population).

During the year 225 persons died from the respiratory form of the disease compared with 632 in 1953. The death rates for those years were 85 and 244 per million population respectively.

B.C.G. vaccination

The number of contacts, school children and students vaccinated with B.C.G. in 1963 and in the four previous years is shown in the following table.

TABLE XIII.6

Year	Numbers given B.C.G. vaccination			
	Contacts	School-children	Students	Total
1959	7,531	20,173	156	27,860
1960	7,067	28,815	324	36,206
1961	7,278	29,062	265	36,605
1962	4,425	22,677	87	27,189
1963	4,814	21,958	86	26,858

The sharp fall since 1961 reflects the decline in birth rate after 1948.

The following table shows the number of school children in each local health authority area who were skin-tested and the percentage found positive. The rate of tuberculous infection during childhood in a number of areas is still unduly high.

TABLE XIII.7

Authority	Schoolchildren			
	Number skin tested		Percentage positive	
Anglesey C.C.	511	(641)	12·9	(15·1)
Breconshire C.C.	383	(570)	12·3	(7·7)
Caernarvonshire C.C. ..	1,023	(1,656)	6·0	(13·8)
Cardiganshire C.C.	692	(1,218)	5·6	(5·0)
Carmarthenshire C.C. ..	386	(2,336)	10·9	(13·7)
Denbighshire C.C.	1,326	(1,880)	16·1	(15·8)
Flintshire C.C.	1,891	(1,769)	34·9	(40·8)
Glamorgan C.C.	6,550	(6,461)	13·3	(20·5)
Merioneth C.C...	358	(691)	15·6	(29·8)
Monmouthshire C.C. ..	2,447	(1,645)	24·9	(14·8)
Montgomeryshire C.C. ..	591	(530)	13·7	(14·2)
Pembrokeshire C.C... ..	594	(1,236)	9·8	(13·3)
Radnorshire C.C.	200	(244)	9·0	(9·4)
Cardiff C.B.C.	40,538	(40,147)	28·4	(33·0)
Merthyr Tydfil C.B.C. ..	1,982	(4,572)	16·9	(9·2)
Newport C.B.C.	984	(1,144)	3·6	(1·1)
Swansea C.B.C...	4,814	(3,800)	13·1	(26·8)
Rhondda B.C.	1,217	(1,009)	25·2	(28·6)
WALES	66,487	(71,549)	23·6	(26·3)

NOTE: Figures in brackets refer to 1962

XIV

THE ARTIFICIAL LIMB SERVICE

The numbers of new cases referred to the twenty-two limb centres in England, Wales and Northern Ireland has continued to rise each year until, in 1963, 4,341 new patients were seen for the first time. During the past five years the annual intake of amputees has risen by more than 25 per cent.

1959	1960	1961	1962	1963
3,262	3,539	3,757	4,251	4,341

This rise in the number of "civilian" amputees has been largely offset by the steadily dwindling numbers of those who lost limbs in the 1914–18 war. Of the 45,000 amputees of World War I only 14,000 now remain. Together with the 12,000 who lost limbs due to enemy action in World War II the amputees from war causes now make up only 31 per cent of the 83,000 patients at present under the care of the limb service.

There has been a dramatic rise in the numbers of new artificial limbs supplied by the service during the year. The introduction, in April, of the radically new patellar tendon bearing limb to replace the conventional limb, with thigh corset and side steels, for below-knee amputees caused a steep rise from approximately 15,000 new limbs provided in 1962 to almost 21,000 in 1963.

Of the 4,341 primary cases 3,126 had by the end of the year reached a point in their rehabilitation, after limb fitting and training, where the result could be assessed. In Table XIV.1 these are analysed according to the limbs affected while in Table XIV.2 they are assessed according to sex and age groups. The sex distribution has altered little over recent years, the proportions being males 2.5: females 1.

The steady rise in the total number of new cases seen each year is related to the rise in the proportion of patients aged 60 or over. During the past five years the proportion in the higher age groups has risen steadily from 50·9 per cent in 1959 to 59·3 per cent in 1963. While this rise in the numbers of the elderly must to a small extent reflect the general ageing of the population this alone does not account for its full extent. Other factors which must have an effect are not only increasing survival of old people after amputation but also the increasing confidence of consultants in the hospital service that advanced age does not necessarily rule out the hope of successful limb fitting and rehabilitation. That this confidence is well founded is supported by the fact that four out of five of all new cases were successfully fitted and trained in the use of artificial limbs.

TABLE XIV.1

All cases analysed by limbs affected

	Cases	*Limbs affected*
Single arms	254	254
Single legs	2,517	2,517
Single arm non-amps.	119	119
Single leg non-amps.	28	28
Double arms	2	4
Double legs	159	318
Double arms non-amps...	23	46
Double leg non-amps.	11	22
Multiples	13	48
TOTALS	3,126	3,356

TABLE XIV.2

Analysis by sex and age group

Age	Male		Female		Total	Per cent
	Single	Multiple	Single	Multiple		
0– 9 years ..	72	30	60	24	186	5·9
10–19 ,, ..	97	..	29	..	126	4·1
20–29 ,, ..	152	5	24	..	181	5·8
30–39 ,, ..	138	3	24	..	165	5·4
40–49 ,, ..	157	9	47	2	215	6·8
50–59 ,, ..	286	18	81	4	389	12·4
60–69 ,, ..	510	33	165	9	717	22·9
70–79 ,, ..	483	37	293	13	826	26·4
80 and over ..	163	15	137	6	321	10·0
TOTALS ..	2,058	150	860	58	3,126	100

Tables XIV.3 and XIV.4 give a detailed analysis of all cases to show the cause of amputation. There is no essential change in the proportions due to disease trauma and congenital abnormality except that the aftermath of the thalidomide incident has caused a slight rise from 5·1 to 6·5 per cent in the congenital group

Peripheral vascular disease continues to be by far the most important single cause of amputation accounting, with diabetic gangrene, for 78 per cent of al those in the disease group and for 52 per cent of all primary amputations.

Almost half (46·7 per cent) of all limbs lost as the result of trauma were caused by traffic accidents, and 28·6 per cent were either drivers or passengers in private motor cars or on motorcycles. The proportion of cases coming annually as the result of industrial accidents remains fairly constant, at 37 per cent o those who lost limbs as the result of trauma.

TABLE XIV.3

Table to show cause of amputation

Cause	*Single*	*Multiple*	*Total*	*Per cent of 'A'*
A. TRAUMA				
1. War—Forces	24	..	24	3·6
2. War—Civilian	3	..	3	0·5
3. Industrial	234	13	247	37·0
4. Traffic—Pedestrian	81	1	82	12·3
5. ,, —Private Vehicle, Driver or passenger	191	..	191	28·6
6. ,, —Commercial vehicle, driver or passenger	15	..	15	2·2
7. Public Transport, passenger Road	4	..	2	0·3
8. Rail	20	2	22	3·3
9. Water	..	..	..	..
10. Air	..	..	..	..
11. Home	34	1	35	5·2
12. Sport	19	..	19	2·8
13. Other	26	1	27	4·0
TOTALS	651	18	669	100

Cause	*Single*	*Multiple*	*Total*	*Per cent of 'B'*
B. DISEASE				
14. Osteomyelitis	53	..	53	2·3
15. Art. sclerosis and thrombosis	1,230	85	1,315	58·3
16. Tuberculosis	22	..	22	0·9
17. Diabetic gangrene	403	40	443	19·7
18. Gas gangrene	3	..	3	0·1
19. Other forms of gangrene	96	9	105	4·7
20. Chronic varicose ulceration	38	1	39	1·7
21. Malignancy	171	..	171	7·5
22. Poliomyelitis	24	..	24	1·0
23. Other diseases	78	..	78	3·5
TOTALS	2,118	135	2,253	100
C. CONGENITAL MALFORMATIONS	149	55	204	

TOTAL CASES=3,126

TABLE XIV.4

Cause	Single		Multiple		Total	Per cent
	Male	Female	Male	Female		
Disease	1,419	699	103	32	2,253	72·1
Trauma	562	89	16	2	669	21·4
Congenital	77	72	31	24	204	6·5
TOTALS	2,058	860	150	58	3,126	100

Total Males=2,208 Total Females=918

Congenital Deformities of the Limbs

Children suffering from gross congenital deformities of the extremities have continued to be referred to limb centres, bringing the total of those with deformities which suggest they were affected by the drug thalidomide to 218*, referred since the beginning of the episode in 1960. Of these, 45 came for the first time to a limb centre during 1963, but almost all were born during the previous year. In almost 50 per cent of these 218 children there was a definite and confirmed history that thalidomide, or a related drug, had been taken by the mother in the early months of pregnancy. For the remainder the history that the drug had definitely been taken was lacking, but they all presented the clinical features associated with the thalidomide syndrome.

The ages at which the children were first referred to limb centres varied widely, the average being 10 months. The ratio of the sexes presenting in this group is 2 boys:1 girl. The arms were more frequently affected than the legs.

An analysis of these cases with severe, multiple (and usually symmetrical) lesions showed the following distribution (Table XIV.5).

TABLE XIV.5

1.	All limbs absent, or virtually absent	6
2.	Both arms absent, both legs severely affected	18
3.	Both legs absent, both arms severely affected	6
4.	Both arms absent, legs not affected	36
5.	Both legs absent, arms not affected	3
6.	All limbs severely affected	47
7.	Both arms severely affected, legs not affected	73
8.	Both legs severely affected, arms not affected	29
	TOTAL ..	218

The prosthetic management of all these children has progressed until those who have reached an age at which they could benefit, and have no other abnormality which makes limb fitting inappropriate, have now been fitted either with conventional limbs or, in specially selected arm cases, with limbs activated by external power.

Powered arm prostheses

The use of powered limbs for the most seriously affected of the children with gross upper extremity defects has been the most important development in prosthetics during the year. Although the significance of artificial arms operated by an external source of power came to be widely appreciated only at the time of the thalidomide tragedy, experiments with powered limbs had been going on in Germany since 1956 when Professor Lindemann and Dr. Marquardt, of Heidelberg University, developed a pneumatic motor operated by "bottled" gas. A number of amputees, mainly adults and adolescents had been fitted with these limbs with some success.

Following visits to Heidelberg by teams from the Ministry and from the Nuffield Orthopaedic Centre, Oxford, towards the end of 1962, it was decided that the German pneumatic arms could play an important part in meeting the needs of those with the most severe reduction deformities of the arms. Early in 1963 a beginning was made at Oxford to fit some of these children with powered limbs, using German techniques and components. Later in the year fitting began also at Queen Mary's Hospital, Roehampton, and, towards the end of the year, at Chailey Heritage Hospital, Sussex, and at the limb centre, Liverpool, in collaboration with the Alder Hey Children's Hospital. By the end of the year some thirty children were using powered limbs.

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* This figure is derived from a different investigation from that reported in the series on Public Health and Medical Subjects (No. 112 H.M.S.O.).

While some components are still being imported from Germany, continuous development has been going on and many of the limbs now being fitted are powered with units developed by a Medical Research Council team under Dr. Kinnier Wilson at the West Hendon Hospital.

Most critical assessment is needed to select the children who will benefit by such fitting. Not only must the extent of the loss of function be carefully evaluated but the general medical and mental potential of the child must be studied. Team work on the part of surgeons, paediatricians, therapists and fitters is essential throughout all stages of preparation, fitting and training. Group training of the children maintains an element of competition and emulation which quickens the ability of the young subjects to master the complicated controls of the prostheses.

As a powered limb totally lacks tactile sensation, it is imperative that in all cases of upper limb amelia the use of the feet and toes be encouraged to enable the children to experience the texture, weight and temperature of objects in their surroundings.

Within certain limits, those children who can most benefit from the use of power are: those with bilateral amelia and those with phocomelic limbs so short that they cannot approximate their hands within their field of vision on bringing their hands to their mouths. But even those with longer phocomelias may need the help of external power as they grow and as artificial limbs develop to a point where they can confer even greater function. As this happens, those for whom it was decided that immediate fitting was unnecessary are being reassessed.

Success depends on intimate, continuous and prolonged contact between the child and the fitting team. It therefore follows that these children and their mothers who form an important part of the team must be admitted to hospital (the mother for a shorter period). To this end, in addition to the present facilities at Oxford, Roehampton and Chailey Heritage, a special new unit is being built at the Alder Hey Children's Hospital, Liverpool, to meet the needs of children in the north-west and an extended new unit will be opened at Queen Mary's Hospital, Roehampton.

Research

One of the most stimulating events of the year was the handing over of the Patellar Tendon Bearing project to production for general supply. The P.T.B. limb embodies a fitting technique which by redistribution of the weight loads on the stump permits most below knee amputees to dispense with the thigh corset and side steels required with previously known techniques. It was designed by Professor Radcliffe of University of California, Berkeley. The Research Department has kept a close watch on the first year's work giving assistance from time to time when difficulties have arisen. It has been gratifying to find how few problems have arisen and how uniformly acceptable this type of limb has been throughout the country. Trials have been made of modified forms of suspension for this limb. A special casting stand designed by the U.S. Veterans' Administration Prosthetic Centre has been obtained from America. It is claimed that this reduces the amount of hand work which has to be done on the cast prior to fabrication of the socket and that this reduces the possibility of errors. These claims will be investigated.

Progress has been made on the Above Knee Total Bearing project. Pilot trials in the Research Department showed considerable promise. The wide distribution of the weight load over the skin of the entire stump causes a considerable reduction in unit pressures in comparison with previous fitting techniques. In addition, it appears that the circulation is actively assisted by the uniform contact under pressure. In addition to normal stumps, four patients with stumps and saddle areas deprived of sensation from various causes, have been fitted with total bearing and have tolerated this fitting, one for over three years without the ulceration which was the inevitable outcome of any previous attempt at fitting. This is convincing evidence that unit pressures are reduced to within the tolerance of the skin. This technique has now been taught to the Ministry's contractors who are carrying out trials on a larger scale so that we may determine what problems may arise under production conditions.

Two new types of feet are nearing production. The Metalastik ankle, which provides movement in all directions has been developed by the introduction of castings suitable for batch production. The first small production run is now on field test.

One of the Ministry's contractors is well advanced in preparing a production SACH (solid ankle, cushion heel) foot. The first production run of these is also to be tested in the near future.

Various knee mechanisms are being considered. In the gait cycle, the leg goes through two main phases. First the phase of weight bearing, or "stance phase" lasting from "heel contact" to "toe off" and second the "swing phase" from "toe off", when the knee is first flexing and then extending until the next "heel contact". Knee mechanisms are designed to bring these movements under control for patients who have had amputations above their own knee.

There have been devices to control the swing phase for many years. Most of these are concerned with damping or decelerating the angular movements of the knee. Till recently a simple friction brake with or without some form of elastic accumulator tending to extend the knee has given a reasonably satisfactory gait but constantly applied friction of this sort is wasteful of energy. Interrupted friction, which is applied only at the end of the movement in either direction, was therefore an obviously possible improvement. Further attempts have been made in this country by modification of the existing constant friction units, but this resulted in a too sudden application of the friction which was felt by the amputee as a jarring on the stump. Attention has therefore been directed to a multiple disc clutch system, now under development by one of the Ministry's contractors in consultation with the Research Department.

The difficulty with such simple mechanical systems, however, is that they are not self adjusting to walking speed. For this a fluid system is required. Two American hydraulic mechanisms are being evaluated, the Henschke-Mauch and the Hydra-cadence. Also under test is a pneumatic device suggested by Professor Radcliffe of the University of California, Berkeley.

Mechanisms to control the stance phase are concerned with preserving stability at the knee. The simplest means of doing this is by aligning the limb in such a way that the knee centre is behind the line of the weight thrust, so preventing buckling. At the end of the stance phase this aligment stability has to be broken by actively flexing the knee (by forcibly flexing the natural hip). The more stable the alignment the greater the effort to flex the knee. The less stable the alignment, the more muscular effort is required to reinforce the alignment stability to prevent buckling on uneven ground, etc. Thus this system is likely to be wasteful of energy. The Blatchford Stabilised Knee, by introducing mechanical stability allows the limb to be assembled without alignment stability and no muscular effort is required to maintain knee extension and little to flex the knee at "toe off". This device is now in production for the Ministry. These systems, however, result in the body's centre of gravity being required to be lifted over the limb in an arc. The normal subject allows his knee to bend somewhat thus reducing the extent by which the body weight must be lifted and thus conserving energy. Professor Lewer Allen of the University of Capetown has suggested an idea for a hydraulic device to allow weight to be carried on the slightly flexed artificial knee thus more nearly simulating normal gait and conserving energy. His ideas also incorporate certain foot, and mid foot actions which may more nearly simulate the normal than previous artificial feet. Professor Allen had developed these ideas to some extent and had produced a rough prototype which he showed at the Prosthetic Course of the Committee on Prostheses Braces and Technical Aids of the International Society for the Rehabilitation of the Disabled in Copenhagen in July, 1963. He lacked the resources to develop his ideas fully and sufficient patients for an adequate trial of his devices. He therefore entrusted further development to one of the Ministry's contractors along with the Research Department. We have been fortunate in securing the help of Mr. Fendrich at present working with Dr. Swanson at Imperial College for some of the fundamental research necessary to the project.

Work on artificial arms has been dominated this year by the needs of the children with thalidomide induced deformities. The department is greatly indebted to Dr. Kinnier Wilson of the Medical Research Council's Unit at Hendon who has been devoting much of the time of his unit to developing pneumatically operated devices. Thus the unit designed to enable conventional arms to provide pat-a-cake grasp for the youngest children has been applied with consistent success to a number of children with severe bilateral upper limb deficiences. The wrist rotation motor (for slightly older children) has reached the stage of prototype trials. With various combinations of equipment now available, some of the children are already attaining function in excess of our expectations.

Work has been continued by Dr. Bottomley at St. Thomas Hospital on the myoelectric control of a powered prosthesis. For this, the electrical signal produced by a muscle when it acts is picked up, amplified and treated electronically and used to control movement in such a way that the force of the movement is proportional to the force of the muscle contraction. Prototype sets are being made up for trial on patients.

The centrally operated split hook mechanism designed by Dr. Swanson of Imperial College has been developed so that it can now be operated by external control as an optional alternative. The design, in addition, lends itself to the application of the hollow fingered jaws and the pivot designed under a Research Department development contract. A prototype hook incorporating these features is now on trial by a patient.

Possibly as a result of the stimulus towards the development of power operated devises resulting from the thalidomide episode, but probably more because of the development of biomechanics as a science in its own right the limb service has been approached increasingly often by workers in Universities and similar institutions. These have mostly been seeking advice and help in setting up studies of various aspects of the control and function of prostheses. These tasks are required for purely academic research, for studies for post-graduate students in preparation for their theses, or for senior undergraduates, and it has usually been possible to suggest lines of work for them which have some likelihood of producing results which may be helpful to the limb programme. The policy of the Research Department has always been to seek specialised technical advice and help from experts in the particular field concerned and it is very gratifying to find this policy justified by these offers from academic bodies.

Institutions that have started projects or are helping the service in one way or another include the following:—

Imperial College;
University College, London;
Battersea College of Technology; and
Liverpool College of Technology.

The Research Department is also trying to establish communication with other institutions known to be doing work on allied subjects.

Several overseas visits were made by staff of the Research Department during the year. Dr. McKenzie attended a meeting of experts organised by the World Veterans' Federation, the 9th World Congress of the International Society for Rehabilitation and served on the Faculty of the 6th International Prosthetics Course organised by the Committee on Prostheses Braces and Technical Aids. These meetings were held in successive weeks in Copenhagen. He visited Dr. Dederich in Bonn to have further discussions on surgical technique, and attended the 9th Congress of the Societe Internationale de Chirurgie et de Traumatologie in Vienna where he was an invited speaker at a symposium on deformities resulting from thalidomide.

The Research Engineer, Mr. Swettenham, visited America in company with Dr. Vitali with the primary object of visiting centres where work is being done on powered prostheses.

Dr. McKenzie was seconded for six weeks in November/December to the Government of Australia to visit each State and assist and advise them in setting up a service for the treatment of children with defects caused by thalidomide.

Limb Fitting Centres

The long term policy of closer integration of the limb service with the orthopaedic service of the country is being advanced steadily by the rebuilding of limb fitting centres in the curtilage of hospitals with major orthopaedic interests.

New centres have now been completed at Liverpool, Birmingham and Portsmouth while building at Stoke and Leicester is well advanced. Building has also been started at Brighton and Chatham.

Visitors

Visits by surgeons from twenty-five different countries abroad have been made to Roehampton and other limb centres in Britain during the year. Much interest has been shown in the programme for treating infants with severe congenital deformities.

Courses

Two courses for orthopaedic surgeons and senior orthopaedic registrars held at Roehampton, in March and October were very well attended. The course arranged for consultants in physical medicine and geriatrics in November was so heavily over-subscribed that it was decided to hold a special course in the spring of 1964 and to hold two such courses regularly each year.

Many physiotherapists, occupational therapists and remedial gymnasts continue to attend the training schools at Roehampton to gain experience in the methods used in the rehabilitation of amputees.

The Standing Advisory Committee on Artificial Limbs

The Service is greatly indebted to the Standing Advisory Committee and to its Executive Committee under the Chairmanship of Sir Walter Mercer and Mr. H. Jackson Burrows respectively for much help and advice.

Sir Walter Mercer after a decade of distinguished service resigned from the Chairmanship, in September, and Mr. Jackson Burrows has accepted the invitation of the Minister to fill this post.

XV

TRENDS IN HOSPITAL DESIGN AND EQUIPMENT

Last year, this section of the report dealt with the planning of operating theatre suites and the development of intensive therapy units, and discussed possible future uses of ultrasonics in medicine. Special mention was made of the rôle of physiological monitoring systems in relation to surgery and the type of accommodation required for them in future operating theatres was considered.

During the past year, the general importance of automation in the hospital service has become increasingly apparent and automated procedures of one kind or another have been considered over a wide field of hospital work and have been introduced in some instances. Thus, there have been further advances in the methods and equipment available for the measuring and recording of physiological data direct from the patient and the range of parameters which can now be covered satisfactorily has been extended. In the field of clinical pathology, the automation of some of the work of the biochemical laboratory appears to offer considerable advantages. More significant than the development of any specialised form of automation, however, has been the work on the applications of the electronic digital computer in the field of medicine and the hospital service. Although this latter work is still in its earliest stages in this country, the possible applications of computer based automatic data processing systems in the health field have great importance for the future. This year, therefore, the subjects for discussion have come under the general heading of Automation and include patient monitoring and clinical measurement, automation in the biochemical laboratory, and a short preliminary look at the "medical" uses of computers.

Patient monitoring

Up to the present time, the main clinical fields in which physiological monitoring systems have been employed, have been the more highly specialised branches of surgery. The equipment carries out a continuous monitoring function and relevant physiological information can be displayed in the form of tracings or other suitable visual presentation and can be permanently recorded at the same time. Standard parameters generally monitored are temperature, respiration, blood pressure (systolic and diastolic) and heart rate. The latter is often obtained from the E.C.G. which may also be recorded. In the field of cardiac investigation and surgery, intra cardiac pressures, oxygen saturation and other measurements are taken and to these have been added a wide range of other possible determinations some of which involve the establishment of extra corporeal circulation.

The increase in the range of possible recordings has been accompanied by improvement in the quality of the transducers and possible use of patient monitoring equipment for cases other than surgical has been pursued.

In contrast to the continuous monitoring of parameters vital in an acutely ill patient, it is quite possible to undertake observational or prophylactic monitoring of the routine case in the ward. In such a case the object might be to record and give warning of unexpected variations in the measured parameters or, by scanning at fixed intervals, to provide a more frequent and reliable record than could be expected from the normal procedures of nursing, however intensively applied.

In the operating theatre, the system is under the constant supervision of a qualified expert who can detect at once, from the display unit before him, any critical worsening in the condition of the patient, or alternatively, any false record occasioned by disconnection of a transducer or technical failure of the equipment. In the ward, however, the system must include built in alarms to cover these eventualities.

Although transducers have been greatly improved, some are not well tolerated by conscious or semi-conscious patients. American experience that a 5 mm diameter rectal probe used for temperature recording becomes intolerable to an ill patient after a few hours, illustrates this point. Such difficulties have affected the use of monitoring equipment on ward patients and alarms arising for reasons other than clinical urgency have been a problem.

In intensive care units, monitoring systems may assist the nursing staff, in situations where the staff/patient ratio is below optimum level, by drawing attention to clinical emergency occurring in a patient not at that moment under close direct supervision, but experience so far does not suggest that the use of such systems will reduce the number of nurses required to staff the unit adequately.

There is no doubt that the value of patient monitoring systems has been proved in the operating theatre and that a good case may be made for installing such systems in suitable intensive care units. The value in relation to observational or prophylactic monitoring of ward patients, is however, not yet established although clearly individual cases may arise in which monitoring is indicated for a specific purpose. It would seem prudent, with a view to the future, to include the provision of electrical conduits in selected wards when planning new hospitals, but any other provision for patient monitoring, except in operating theatres or intensive care units, does not seem justified at the present time.

Clinical Measurement

Space has been given above to consideration of the position of patient monitoring at the present time and it would seem appropriate to discuss briefly the wider field of measurement and instrumentation in clinical work in the hospital service. Continuing advances in medicine and surgery and the application of new methods of investigation and treatment have produced an increasing demand for measurement and assessment of various physiological functions, and the arrangements for meeting these needs have varied considerably from hospital to hospital, depending largely on the identity of the clinician mainly interested in a particular field and on such factors as personal relations between staff and the siting of accommodation which happened to be available. In some hospitals, measurement and instrumentation services have been built up departmentally and are provided, in each case, by staff attached to the particular firm working in the individual specialty concerned. While this may have some advantages, it can lead to duplicate provision of expensive equipment, workshop facilities, general accommodation or even staff.

At the Westminster Hospital, the Department of Clinical Measurement provides a service in the same way as the diagnostic X-ray department or the department of clinical pathology. Clinicians in any specialty are invited to seek the help of the department in problems of measurement or instrumentation and to make use of the service which it offers. The department's work covers clinical measurement and instrumentation of all kinds, and includes cardiac catheterisation and the measurement of intra cardiac and vascular pressures and oxygen saturation, respiratory function tests, E.C.G.s, haemodialyses, isolated limb and organ perfusions, patient monitoring, etc. The department is in the charge of a consultant on the staff of the hospital who devotes his whole time to this work. He has two clinically trained assistants on his staff and the help of a physicist and electronic engineer. The department has been running successfully for five years.

There are a number of centres at which a department of physics or physiology deals centrally with problems of instrumentation or measurement but other hospitals are considering the possible establishment of departments of clinical measurement along the lines of the Westminster department. In practice, there appear to be very real advantages in the close clinical liaison which can develop in a clinical service unit of this kind in which an active consultant can form a link between the requirements of physicians and surgeons and the methods and technology of the physicist and electronic engineer.

Automation in the Laboratory

The hospital service continues to experience a steady rise in demand for established biochemical investigations concurrently with the development of new and additional tests and services and the pressure on laboratory space and staff is considerable. The position might well become untenable without the assistance of the technical aids which are resulting in increasing productivity. During the past few years the introduction of auto-analysers has made it possible for an almost complete electrolyte analysis to be carried out on each of 100 serum specimens each day by only two technicians. Work is now proceeding on analogue to digital conversion which may automate and speed up the process of expressing the wave-form results obtained on the analyser recorder in the numerical terms reported to the wards.

Although a number of chemical techniques and analyses have been successfully automated and development is continuing in this direction, progress in the automation of laboratory records has been much slower. Modern business machinery can greatly improve laboratory documentation and recording but so far only a few laboratories appear to be making use of such aids and fewer still are equipped with the newer electronic devices such as electric printing calculators, flexowriters, etc. Pilot studies are being undertaken in this field.

It seems likely that the development of adequate communications will make it possible in the future to provide services for a number of hospitals from a single automated laboratory. Such a laboratory, possibly computer assisted, could deal with a very large work load. It would clearly introduce problems of another kind in relationships between clinician and pathologist.

Large scale laboratory automation of this kind, however, does not solve the problems of the smaller laboratory which is geographically isolated from larger centres. Such laboratories, although overloaded in terms of their own capacities, do not have a sufficiently heavy work load to make the provision of this type of equipment an economic proposition. In this type of laboratory, there is scope for "limited function automation" and the development of comparatively inexpensive semi automatic aids to speed up the laboratory processes at a number of different points. Such aids include automatic meter reading, devices for the accurate distribution of chemical reagents, for the transfer of the product of a chemical reaction to a spectrophotometer, etc.

In addition to the spectacular possibilities for automation in the biochemical laboratory, there is undoubtedly room for the introduction of automated methods in the pathology laboratory as a whole, particularly on the documentation and recording side. In the specialised field of haematology, the automatic cell counter is widely in use and experimental work on an automatic blood grouping system is under way. The use of semi automatic devices for specific procedures such as the dilution of blood samples is further assisting the laboratory technician.

The continuing rise in demand for a wide range of investigations and the shortage of trained staff available make the automation of laboratories a matter of the first importance.

The "Medical" uses of Computers

Automatic data processing equipment has been in use in the department and in regional boards for a number of years, mainly for pay roll and accounting work and for statistical work. In recent years some of the processing has been computer based. The possible applications of computers in medicine are now beginning to receive active attention and attempts are being made to apply the results of experience gained in other countries, mostly in the U.S.A., to the hospital service in this country. During the year a small group drawn from departmental, M.R.C. and hospital staff visited the United States to study developments there.

A great deal of thought and work is being expended in this field at the present time and it is too early to say what the results are likely to be. It may, however, be worthwhile recording that from the large number of applications now being suggested in the medical field the most promising appear to be the uses in relation to medical records and clinical data, laboratory uses, and uses in medical research projects. Centrally, at the General Register Office, the use of computers in relation to vital statistics and registers of all kinds and to epidemiological surveys is established. The potential advantages of combining selected health data obtained from all sources in one comprehensive record are being investigated in a special record linkage study.

It is hoped that it will be possible to report progress in this field at greater length next year.

XVI

GENERAL PRACTICE

Early in October, 1963, a Sub-Committee of the Standing Medical Advisory Committee of the Central Health Services Council published "The Field of Work of the Family Doctor". This Sub-Committee under the chairmanship of Dr. Annis Gillie was composed entirely of members of the medical profession, largely general practitioners, and had as its remit "To advise on the field of work which it would be reasonable to expect the family doctor to undertake in the foreseeable future, having regard to the probable developments during the next 10 to 15 years both in general practice itself, including its organisation, and in the supporting facilities provided by the hospital and specialist and the Local Authority services." It followed the earlier reports dealing with the future plans for the hospital and the local authority services, and although its content and purpose was different it was an essential counterpart to them.

The report is an important document as an account of best current practice and an indication of a pattern of practice which we might seek to develop universally. Most of what it contains has been said piecemeal before but its importance lies in its coherent presentation of the many problems involved and of practicable methods of development. It brings no ready panacea to cure the troubles of general practice because under the present system there is none but it states the case for the family doctor in the community with, broadly, the objectives which have become the most distinctive feature of British health services. The rôle of the family doctor is redefined and ways of preparing the doctor for this rôle and its achievement are discussed.

The Gillie committee noted that doctors worked better together in groups and that their work when in partnership was enhanced where local health authority nursing staff could be attached to the practice. Group practice made such health visitor/nurse attachments easier and also made better practice organisation with secretarial help, appointment systems and better office and medical equipment economically practicable.

In this context it has been noticeable over the past few years that there has been an increasing interest in group practice and an accompanying acceleration in applications for group practice loans. These interest free loans are available, with certain provisos, to groups of practitioners who may or may not be in partnership and details of the organisation of the loans fund and of the work of the committee comprised of representatives of both the General Medical Services Committee and the Ministry of Health, which advises on the scheme are given in the Ministry's Annual Report. Already a substantial number of general practitioners have had loans. The maximum sum which can be loaned has now been increased to £2,500 per principal (£3,000 in specially expensive areas, e.g., London or Central Birmingham) or 80 per cent of the amount spent whichever is the lesser. The group, unless rural, must number at least three. It must work from common central premises and have adequate ancillary help. The plan must be one approved by the Committee who first arrange for two medical members to visit the practice.

Since its inception in 1954 to 31st December, 1963, there have been 791 applications for and 429 approvals of loans with a marked increase in applications since 1960. In the years 1954–1960 slightly more than 150 groups received loans. If a line is drawn from the Trent to the Welsh Dovey there have been 567 applications and 291 approvals south of that line, and 224 applications and 138 approvals north of the line. It would be better if more applications came from the latter sector as it is in these areas that lists are larger and there is the greater fall in the number of applicants for practice vacancies.

The General Medical Services Advisory Service Ltd. was officially launched during the latter part of the year. This service which is the result of joint effort by the British Medical Association, the College of General Practitioners and the Medical Practitioners' Union will, when in full operation, advise family doctors on the design, conversion and equipment of premises for professional use. It fills a gap left by the closure of the former advisory service provided by the Medical Practitioners' Union and it is sufficiently broadly based to become an important addition to the facilities for promotion of the best in general practice. A doctor in active general practice has been appointed as part-time director.

Mention is made in other chapters of the growth of schemes for the attachment of local health authority staff to individual practices. This was first tried experimentally with health visitors and in Hampshire and Oxford the experimental stage has long been passed. By the end of the year all practices in Oxford had health visitors attached to them and in Hampshire many home nurses who are also health visitors are attached to rural practitioners who have smaller lists.

The Gillie Committee strongly endorsed this development and there is little doubt that opinion among practitioners and public health staff is moving rapidly in this direction despite many practical difficulties. It is generally reported that doctors and nurses alike find they are able to do their own work better in this kind of professional partnership. Some 300 practices are believed to have such arrangements and roughly half the local health authorities can show one or more attachments now working. Similar arrangements have long been the rule in Sweden, where districts and practices are commonly co-extensive.

Another interesting project, also in Hampshire, has been a course for the training of doctor's receptionists or secretary receptionists. This is in its early stages, but it could help to fill a great need. The local Education Committee and the Executive Council and Hospital Management Committee have supported the local Medical Committee in this development.

Reference is made elsewhere to the development of postgraduate training. The main need in general practice is for opportunities for continued learning and new medical centres at district hospitals are beginning to assist in this. In many areas local medical committees have been active and at many centres organised courses have been fully subscribed by a substantial proportion of local doctors usually at their own expense. The refresher courses organised by universities have been much more heavily patronised than in earlier years, about a quarter of all doctors in general practice having attended. There is no doubt of the readiness of a large proportion—though not all—doctors to make a considerable effort to obtain these benefits.

The year has been one of unrest in general practice partly due to problems inherent in the changing nature of medicine, partly to the relative rigidity of the structure and partly to methods of distribution of remuneration. A Working Party established under the Chairmanship of Sir Bruce Fraser and consisting of practitioners and Ministry staff is currently engaged in trying to achieve solutions of some of these problems.

XVII

THERAPEUTIC AGENTS CONTROL AND TOXICOLOGY

Control of the Safety and Quality of Therapeutic Agents

Joint Sub-Committee on the Safety of Drugs

The Annual Report of the Chief Medical Officer for 1962 mentioned (on pp. 196 and 197) the recommendations made in the Interim Report of the Joint Sub-committee which was set up by the Standing Medical Advisory Committee with Lord Cohen of Birkenhead as chairman to advise the Minister of Health and the Secretary of State for Scotland on what measures were needed:—

- (i) to secure adequate pharmacological and safety testing and clinical trials of new drugs before their release for general use;
- (ii) to secure early detection of adverse effects arising after their release for general use; and
- (iii) to keep doctors informed of the experience of such drugs in clinical practice.

Among these recommendations was "that there should be an *expert body* to review the evidence and to offer advice on the toxicity of new drugs, whether manufactured in Great Britain or abroad, before they are used in clinical trials". The Joint Sub-committee indicated in its Interim Report that it proposed, after further consultation, to formulate detailed suggestions about the composition and terms of reference of the recommended advisory "expert body". These were provided in the Final Report of the Joint Sub-committee, published in April, 1963, which suggested that after consultation with relevant interests, which should include the Royal Colleges, the General Medical Council, the Medical Research Council, the British Medical Association and the Pharmaceutical Society of Great Britain, the Health Ministers should appoint a new committee, to be known as the Committee on the Safety of Drugs, which should be entirely independent of the pharmaceutical industry. It was further suggested that this new committee might be supported by sub-committees to advise it on each of three aspects, namely:—

- (i) toxicity;
- (ii) clinical trials; and
- (iii) adverse reactions.

The function proposed for the parent body in this group of committees was "generally to guide and co-ordinate the activities of the sub-committees" and it was emphasised that any of the sub-committees should have power to consult outside experts including, where appropriate, those associated with the pharmaceutical industry.

The principal tasks to be undertaken by the main committee with the assistance of its three sub-committees were defined in more detail as follows.

Toxicity

To establish, through protocols or other evidence submitted by or on behalf of the manufacturer, that before a new drug was submitted for clinical trials it had been subjected to adequate toxicity testing, and to advise the manufacturer accordingly.

Clinical trials

To determine whether, having regard to evidence submitted by the manufacturer and consultants concerned, the trials were adequate and the safety of a new drug had been established in relation to the conditions for which it was intended to be used and, if so, to decide that it could be safely released for general use or, whether, being satisfied that a new drug has clinical value and is relatively safe, that a longer trial under controlled conditions, e.g., in hospitals or on special prescription, should be made before its release for general use.

Adverse reactions

To undertake the collation and assessment of reports of adverse reactions associated with all drugs already in general use and to seek the co-operation of family doctors, of hospital specialists and of manufacturers to this end; also to use statistical data available from National Health Service sources about the extent to which particular drugs are being prescribed in order to make a quantitative as well as a qualitative assessment of the hazards involved.

Six of the eight members of the Joint Sub-committee considered that a Committee on the Safety of Drugs of the kind proposed in their final report need not rest, at least for the time being, on a statutory basis. They recognised, however, that the whole subject of legislation on medicines urgently needed a complete review in which it would be of advantage to include many matters outside their own terms of reference, e.g., control of quality, control of sale direct to the public, labelling of containers, use of approved names, regulation of therapeutic claims made by the manufacturer, etc. They urged that an immediate start should be made on the task of preparing comprehensive legislation to these ends and emphasised that this work should not await experience of the success or otherwise of the recommended interim measures based on voluntary co-operation between the pharmaceutical industry and the suggested group of expert committees. At the same time the Joint Sub-committee suggested certain "sanctions" which, in the absence of comprehensive legislation, might be applied in support of the scheme of voluntary co-operation which they had proposed as an interim measure. These were:—

(i) that it should be accepted in practice that no doctor would agree to undertake a clinical trial of a new drug without an assurance that full data on its toxicity tests had been seen and approved by the Committee on Safety of Drugs;

(ii) that if, after clinical trial, a manufacturer decided to release a new drug for general use contrary to the Committee's advice the fact should be brought immediately to the attention of all prescribers;

(iii) similarly, if it came to the notice of the Committee that a manufacturer had marketed a new drug without giving the Committee an opportunity to assess the adequacy of any toxicity tests or clinical trials which might have been carried out, all prescribers should be informed.

Committee on the Safety of Drugs

The Government having accepted in full the majority recommendations of the Final Report of the Joint Sub-Committee, the Health Ministers announced in June, 1963, that, after consultation with the medical and pharmaceutical professions and the pharmaceutical industry, they had appointed a Committee on the Safety of Drugs under the chairmanship of Sir Derrick Dunlop, F.R.S.(ED.), D.M., F.R.C.P., with the following terms of reference:—

1. To invite from the manufacturer or other person developing or proposing to market a drug in the United Kingdom any reports they may think fit on the toxicity tests carried out on it; to consider whether any further tests should be made, and whether the drug should be submitted to clinical trial; and to convey their advice to those who submitted reports.
2. To receive reports of clinical trials of drugs submitted thereto.
3. Taking into account the safety and efficacy of each drug and the purposes for which it is to be used, to consider whether it may be released for marketing, either with or without precautions or restrictions on its use; and to convey their advice to those who submitted reports.
4. To give to manufacturers and others concerned any general advice they may think fit on the matters referred to in paragraphs 1–3.
5. To assemble and assess reports about adverse effects of drugs in use and prepare information thereon which may be brought to the notice of doctors and others concerned.
6. To advise the appointing Ministers on any of the above matters.

Later in the year the Committee on the Safety of Drugs set up three Subcommittees:—

(i) On Toxicity (Chairman: Professor A. C. Frazer, C.B.E., M.D., F.R.C.P.).
(ii) On Clinical Trials and Therapeutic Efficacy (Chairman: Professor R. B. Hunter, M.B.E., M.B., F.R.C.P.).
(iii) On Adverse Reactions (Chairman: Professor L. J. Witts, C.B.E., M.D., F.R.C.P.).

and announced that the term "drug" would be taken by them to mean "any substance or mixture of substances destined for administration to man for use in the diagnosis, treatment, investigation or prevention of disease or for the modification of physiological function", also that the term "new drug" would include "new formulations of existing drugs, drugs to be presented for a new use and existing substances not previously used as drugs". The Committee informed manufacturers and others that they would be ready to begin operations on this basis by 1st January, 1964. They had by then established the nucleus of necessary staff and had enlisted the co-operation of the pharmaceutical industry in carrying out a trial run on new preparations which were ready for release before their appointed date.

The Committee had prepared a note for circulation to the industry and the professions setting out the basis upon which they proposed to operate. Throughout they relied upon and received ready co-operation in their work from the professions and the industry. The amount of work falling upon the Committee

and its sub-committees is formidable and represents a heavy additional burden for the members, nearly all of whom already have full commitments to their university departments, hospitals or practices. Their voluntary effort has made practicable the early introduction of safety measures with the minimum impediment to medical work and industrial activity.

The Therapeutic Substances Act, 1956, Part I: New Regulations

The Regulations made under Part I of the Therapeutic Substances Act, 1956, like those made under its predecessor—the Therapeutic Substances Act, 1925, relate to the manufacture and importation of certain substances used in medical diagnosis and treatment of which the purity or potency cannot be adequately tested by chemical means. These regulations provide a statutory "quality" control of certain groups of therapeutic agents, such as hormones, vaccines, enzymes and those antibiotics which are prepared for parenteral administration. This control is intended to ensure that these agents are not unsafe owing to the presence of avoidable impurities and that their therapeutic efficacy is not deficient through want of proper biological standardisation of potency. The Act and its Regulations are, however, not concerned with the inherent toxicity of these agents or with the extent of this toxicity, if any, in relation to their therapeutic efficacy.

The Therapeutic Substances Regulations of 1952 (which were made under the 1925 Act) consolidated the Regulations made in 1931 together with eight subsequent sets of Amendment Regulations made between 1935 and 1950. Such consolidation had by then become essential in order to facilitate the practical application of the Regulations by manufacturers and importers but it did nothing to diminish the necessity for further amendment. This is determined by the progress of medical and pharmaceutical research which frequently leads to the development of new therapeutic agents falling within the scope of the Act as well as to new methods of biological testing and standardisation. A measure of the frequency of such new developments is that within the period between 1952 and 1957 it was found necessary to introduce four further sets of Amendment Regulations. These were applicable to aureomycin, i.e., chlortetracycline (1953), to certain insulin preparations and to oxytetracycline (1954), to inactivated poliomyelitis vaccine (1956) and to certain surgical materials, to tetracycline, polymyxin B and viomycin, to hyaluronidase, streptokinase and streptodornase, to heparin and preparations thereof and to corticotrophin and preparations thereof (1957).

By 1958 it had become obvious that to make still further amendments to the consolidated Regulations of 1952 was likely in practice to prove a very unsatisfactory administrative procedure and, accordingly, it was decided that a second consolidation of the existing Regulations with their amendments up to 1957 should be undertaken. This proved to be a difficult task for all concerned and it was not completed until 1963 with the coming into force of S.I. 1963 No. 1450 (Manufacture and Importation, General Regulations) and nine other associated Statutory Instruments each applicable to a group of therapeutic agents controlled by the Act, namely, antibiotics (No. 1451), arsphenamine and analagous substances (No. 1452), dextran solution (No. 1453), enzymes and enzyme inhibitors (No. 1454), hormone products (No. 1455), preparations of human blood (No. 1456), sera and antitoxins (No. 1457), surgical materials (No. 1458) and vaccines, toxins and antigens (No. 1459).

In thus effecting a second consolidation of the Regulations in a form intended to be more convenient for future amendment the opportunity has been taken to omit certain substances no longer in need of this form of control and to include others. Those omitted in 1963 were dimercaprol and certain of its preparations, also certain curare like agents. Those newly included were bacitracin and erythromycin, dextran solution, synthetic hormones of the posterior lobe of the pituitary, influenza and pertussis vaccines, poliomyelitis vaccine for oral use and certain corticotrophin preparations.

It is hoped that in future amendments to the Regulations can be made and applied more easily because they can be referred separately to each of the new Statutory Instruments according to their nature. Owing to the length of time taken to produce the latest consolidating Regulations quite a large number of further amendments are needed almost immediately; among those already under consideration are amendments to the General Regulations (S.I. No. 1450) concerning sterility testing procedures, and amendments to S.I.s Nos. 1451, 1453, 1455 and 1459 which will bring under control the quality of certain new antibiotics, enzymes, hormones and vaccines. Some general changes which will give the Regulations a form agreeing more closely with associated monographs in the British Pharmacopoeia are also needed.

The necessity for all connected with this subject to give constant attention to the production of amendment Regulations so that legislation does not lag behind the pace set by medical research has become increasingly apparent during the last few years. In this task, as well as in the application of licensing procedures to the manufacture and importation of substances controlled by the Act, the Ministry's medical officers continue to receive invaluable assistance from the scientific staffs of the Department of Biological Standards and the Division of Immunological Products Control of the National Institute of Medical Research.

Poisons Information Centres

As foreseen in the previous Annual Report, a system of National Poisons Information Centres came into operation on 2nd September, 1963. By that time an index of some six thousand products—domestic, pharmaceutical, agricultural, industrial, etc.—had been compiled in alphabetical order and copies of this were furnished to Guy's Hospital, London, the Royal Infirmary, Edinburgh and the Royal Victoria Infirmary, Belfast. In each of these centres facilities were provided for answering telephone calls throughout the twenty-four hours and giving information to doctors by reference to the index, or to the textbooks on poisoning also to hand. From the outset and over the following four months the number of enquiries amounted to about forty per week in London, about ten per week in Edinburgh and two or three per week in Belfast. With few exceptions, these were from doctors confronted with an acute case of poisoning or suspected poisoning. The advice given has been confined essentially to an indication of the toxicity of the substance or agent said to be involved, the symptoms likely to arise and an outline of the principles of treatment. The responsibility for the management of each case, of course, remains with the doctor handling the patient. In a number of instances, however, the doctor concerned seeks a further discussion over the telephone about the clinical aspects. At each of the centres, therefore, a system has developed whereby a specialist can be called upon at short notice for this purpose.

Experience over the first four months of operation has shown that, out of every five calls, the substance implicated has been indexed in about three or four of the cases. This is not because the records are really comprehensive, but because products in common use are most frequently involved. For the remainder, it is usually possible to provide an answer from the general reference works that accompany the index. Where these, too, fail, the specialist is called in and, with rare exceptions, can give some help.

Looking back on records over the initial four months it is clear that by far the majority of queries arise from incidents involving drugs and household products. The former have frequently proved dangerous and sometimes fatal; the latter may have caused alarm, but have seldom been truly hazardous.

Plants suspected of being poisonous have occasionally given rise to concern. Only very rarely have agricultural and horticultural pesticides, or industrial chemicals, given any trouble. This, one must assume, can be attributed to the precautions with which they are handled.

Wherever a proprietary product in a particular incident is not indexed, steps have been taken to approach the manufacturers so as to get the information to remedy the omission. In such circumstances they have always been co-operative and forthcoming, notwithstanding the trade secrecy that otherwise surrounds their formulations—a tribute to public spiritedness in competitive industry.

The service has not been limited simply to giving advice, but it has been extended to gaining clinical data as well. To every doctor making a call a letter has been sent subsequently, asking him to be good enough to give a brief resumé of the case, particularly in relation to symptoms, treatment and outcome. Again, it is a pleasure to note that out of all the busy practitioners approached in this way, no less than ninety-five per cent of them have readily rendered such reports. These are proving invaluable. At the end of twelve months' working the plan is to summarise them so as to draw up some general principles about the toxicity and management of the main classes of products that give rise to incidents of this kind—detergents, bleaches, perfumes, anti-depressive drugs and so on.

The original decision to deal only with calls from doctors has been adhered to. Obviously, in unusual circumstances where no doctor is to hand, exceptions to this rule have been made. On the whole, however, the procedure adopted at the Poisons Information Centres has met with approval.

XVIII

VACCINATION AND IMMUNISATION

The rapid increase during recent years in the number of vaccines available for the control of infectious diseases has been a most welcome development, but has brought with it many problems. Expert opinion has been by no means unanimous either on the choice of vaccines to be recommended or on the ways in which they might be used to the best advantage. Divergent views have been taken on several topics of the first importance, such as: the efficacy and safety of various vaccines; the extent to which they should be offered, either to the community as a whole or to groups regarded as in special need of protection; the contra-indications to vaccination; the age at which it should begin; the number of doses and the intervals between them; the advantages and disadvantages of using antigens singly or in combination; the intervals to be recommended between immunising procedures against different diseases; and the co-ordination of these procedures into practical schemes or schedules of immunisation. The medical profession generally, including doctors engaged in public health practice, has come increasingly to seek authoritative guidance in this complex and continually changing field of preventive medicine. This in turn has led to an elaboration of the arrangements whereby the Ministry of Health obtains expert advice on the medical aspects of vaccination and immunisation in order to be in a position to offer guidance.

When the National Health Service Act came into force, in 1948, existing policy on immunisation related to very few diseases. Apart from any requirements for the purpose of international travel, vaccination against smallpox and immunisation against diphtheria were the only procedures officially recommended in England and Wales. In 1949 B.C.G. vaccine was introduced on a limited and controlled scale for the protection of selected groups of the population considered to live at special risk, namely hospital nurses, medical students and persons in close contact with known cases of tuberculosis. In 1953 the Minister of Health and the Minister of Education approved an extension of B.C.G. vaccination to school children at the discretion of local health authorities. Other immunising procedures, such as vaccination against whooping cough or against tetanus, did not, at this time, form part of any officially recommended policy, although some local health authorities had undertaken vaccination against whooping cough with the approval of the Minister of Health.

The general position, as it was ten years ago, was described in the Report for the year 1954 (Ministry of Health, 1955). Some authorities favoured vaccination against whooping cough alone in the first six months of life with immunisation against diphtheria begun at about eight or nine months of age. Other authorities preferred to give combined diphtheria and pertussis, or diphtheria, tetanus and pertussis, vaccine in the first six months. The use of combined vaccines received a temporary set-back as a result of the Report of the Medical Research Council's Committee on Inoculation Procedures and Neurological Lesions (1956), which drew attention to the increased risk of provoking poliomyelitis by the injection of antigens in combined form. With the subsequent diminution in the prevalence of poliovirus infection in the community this risk, which was never great, could be largely discounted. Official schedules of immunisation recommending the use of combined vaccines were published in 1961 (Ministry of Health, 1961). By that time all local health authorities but one had included vaccination against whooping cough in their arrangements under Section 26 of the National Health Service Act. A considerable number had also included vaccination against tetanus, and the publication of the official schedules secured the general adoption of vaccination against this disease by all local health authorities in England and Wales.

With the advent of inactivated poliomyelitis vaccine and the likelihood that this would be applied on a large scale to the control of poliomyelitis in Great Britain, the Central Health Services Council in 1955 appointed with the Scottish Health Services Council, a Joint Committee on Poliomyelitis Vaccine with the following terms of reference: "To advise generally on the conditions which should govern the use of poliomyelitis vaccine in mass immunisation and specifically on such questions as Ministers may refer to them". In retrospect, the setting-up of this Joint Committee, with Sir Henry Cohen (now Lord Cohen of Birkenhead) as Chairman, can be seen to have marked the first stage in the evolution of the arrangements which now exist for ensuring formal expert consideration of the use of vaccines in general and have to a great extent replaced the earlier system whereby Departmental decisions on this subject were usually made after informal consultation with *ad hoc* groups of experts. The need for some such development arose because expert committees already in existence, established by bodies such as the Medical Research Council and concerned primarily with the scientific aspects of immunisation, with the efficacy and safety of vaccines and with clinical trials, could not be expected to offer advice on public health policy and, rightly, refrained from doing so.

In 1959 the Wellcome Foundation sponsored a symposium on immunisation in childhood, which was organised by an independent steering committee under the chairmanship of Brigadier Sir John Boyd, F.R.S. The object of the symposium was summarised by the chairman in the following words: "A number of diseases resulting from bacterial or viral infection can now be prevented by means of vaccines and toxoids, and the problem of administering these to the best advantage, and with the least inconvenience to the recipients, has become complex and difficult. The time has come to assess all the evidence which has accumulated, and to attempt to reach agreement on certain basic principles which must be observed in all inoculation schedules" (Wellcome Foundation, 1960). Contributors to the symposium came largely from Great Britain but included also some experts from other parts of the Commonwealth, the United States of America, France and the World Health Organisation. The immediate practical result of this meeting was the publication (British Medical Journal, 1959) of recommendations, agreed to by the symposium, which included two schedules of immunisation in childhood. The most important difference between the two schedules was that one of them (Schedule A) recommended in the first six months of life only vaccination against pertussis while the other (Schedule B) recommended combining this with vaccination against diphtheria and tetanus in the first six months of life by means of a triple vaccine. The advantages and disadvantages of each of these schedules were fairly evenly balanced and, although many public health workers would have preferred a single code of practice, it was clear that a choice had to be offered and left to the discretion of individual practitioners and medical officers of health.

The great interest in immunising procedures, of which the Wellcome Foundation's symposium was a manifestation, and the uncertainty of many doctors on the best course to adopt for their patients led the Minister's Standing Medical Advisory Committee in 1959 to consider the publication of a memorandum on active immunisation against infectious diseases, as one of the series of memoranda on preventive and social aspects of medicine, intended for circulation to general practitioners and others concerned. To this end the Committee appointed a sub-committee, under the chairmanship of Sir Wilfrid Sheldon, charged with the preparation of this memorandum. The progress of the task illustrated the difficulty of attaining finality in a rapidly developing field. When agreement had been reached and the memorandum was ready to go forward for publication it became necessary to reconsider some of the most important recommendations relating to immunisation against diphtheria in the light of a report by the Medical Research Council's Committee on Diphtheria Toxoid (Medical Research Council, 1962), which had concluded that diphtheria formol toxoid (F.T.), either alone or in combination with tetanus toxoid, could no longer be regarded as adequate for routine primary immunisation in childhood. This necessitated a revision of the proposed schedules of immunisation and of the text, the publication of which was further delayed in order to incorporate later decisions on the routine use of oral poliomyelitis vaccine, the optimum age for primary vaccination against smallpox and a number of minor matters. The memorandum was finally published in March, 1963 (Central Health Services Council, 1963), though schedules which had been included in some of the earlier drafts had been circulated to local health authorities and general medical practitioners about eighteen months previously (Ministry of Health, 1961).

Meanwhile, the Joint Committee on Poliomyelitis Vaccine, though engaged principally with matters relating to vaccination against poliomyelitis, dealt from time to time with subjects not strictly within its terms of reference, for lack of any other authoritative body to which they could be referred. For example, in 1961 the Joint Committee appointed a sub-committee to consider whether advice should be issued to the medical profession on the best use of influenza vaccines available under the National Health Service. The recommendations of this sub-committee were incorporated in a note sent in September, 1961, to medical officers of health and to chairmen of local medical committees. It was becoming evident that it was undesirable to burden the Joint Committee with problems not strictly relevant to its avowed purpose and the move to form an advisory committee with broader terms of reference received further stimulus from the record of complications of vaccination against smallpox inevitably associated with the needless mass vaccination during the outbreak of 1961–62 and the doubts thrown by Professor Dick (British Medical Association, 1962), at the 1962 Annual Meeting of the British Medical Association, on the need for routine vaccination of infants against smallpox in Great Britain. The Joint Committee on Poliomyelitis Vaccine met for the last time in November, 1962, and was then superseded by a new Joint Committee on Vaccination and Immunisation, appointed by the Central and Scottish Health Service Councils, with the following terms of reference:—

"To advise the Health Ministers on all the medical aspects of vaccination and immunisation."

During the brief transitional period a sub-committee on Poliomyelitis Vaccination was formed and met early in February to consider as a matter of urgency the future use of oral poliovirus vaccine. It was important to reach an early decision on the advisability of mass immunisation of children, by means of a so-called "blanketing" operation to be put into effect before the start of the usual season of prevalence of poliomyelitis, with the object of preventing the spread of natural or wild polioviruses in the entire child community. The sub-committee reviewed the notifications of poliomyelitis in Great Britain in 1962, a year in which the incidence of the disease had been remarkably low, and, while some members favoured a "blanketing" operation in the spring of 1963, there was no general agreement that the evidence available justified such a drastic measure. It was agreed to recommend that the occurrence of a case of paralytic poliomyelitis in any district would justify the emergency administration of a single dose of oral vaccine to all children in the neighbourhood of the case, e.g., those living nearby or attending the same school, regardless of their previous vaccinal state. This recommendation, which was subsequently endorsed by the Joint Committee, was made known to local health authorities and executive councils in May, 1963, together with a number of other recommendations relating to the routine use of oral poliovirus vaccine (Ministry of Health, 1963). The implementation of this policy of local "blanketing" may possibly have contributed to the further reduction in the incidence of the disease in 1963, to a level less than a quarter that of 1962, but there can be no certainty of this. At later meetings the sub-committee considered, among other matters, the use of quadruple vaccine, i.e., vaccine containing diphtheria, tetanus, whooping cough and inactivated poliomyelitis antigens and the concurrent administration of triple vaccine with oral poliovirus vaccine either for primary immunisation or for reinforcing doses. It recommended that further trials of these procedures should be undertaken before any general advice was issued on their place in schemes of immunisation.

Another major pre-occupation of the newly-formed Joint Committee was the state of uncertainty which prevailed in some quarters about the wisdom of pursuing a policy of routine vaccination of infants against smallpox. This matter had been considered in September, 1962, by an *ad hoc* group of experts, who recommended that routine primary vaccination should be carried out sometime before the age of two years, preferably during the second year. This advice, which superseded the traditional belief that the best age for primary vaccination in a thriving infant was four to five months, was published in a revised Memorandum on Vaccination against Smallpox in November, 1962 (Ministry of Health, 1962). The change was made because data relating to complications of smallpox vaccination, which had been collected for many years by the Ministry from medical officers of health and from other sources, led to the conclusion that the incidence of such complications, though very small, was higher in the first year of life than in subsequent years of early childhood. The same data were used by those who opposed a policy of routine vaccination in a country like Great Britain where smallpox now occurred only as a consequence of occasional importation from abroad. It was argued that in present circumstances routine vaccination was indicated in this country only for selected groups of persons, such as doctors, nurses, ambulance attendants and dock workers, likely to be exposed to special risks of coming into contact with infected persons; that the efficient application of quarantine and outbreak control measures to contain the spread of infection rendered unnecessary the protection of the remainder of the population by an immunising procedure known to carry some degree of risk and that a well-vaccinated child community had little influence, if any, on the evolution of outbreaks of the kind now likely to occur in countries where smallpox is no longer endemic.

It will be readily conceded that there is some substance in these arguments but their presentation in the medical and lay press has, unfortunately, been marred by a controversial approach to the subject and some inaccuracies in the interpretation of facts. Dixon (1964), for example, in a provocative paper, illustrated his contention that vaccination does not impede the spread of smallpox by a reference to the admirably documented outbreak at Sheffield during 1887-88 and gave as the percentage of cases of smallpox occurring in vaccinated persons a figure which was, in fact, the percentage of vaccinated persons in the population of Sheffield. The official report of the outbreak (Local Government Board, 1889) provides striking evidence of a substantial reduction in the attack rate of smallpox among persons who had been previously vaccinated, when compared with the unvaccinated, and an even greater reduction in the attack rate among persons who had been previously vaccinated on more than one occasion. These differences applied not only to young children, who might be regarded as protected by fairly recent vaccination, but also to persons aged 10 years or over, whose vaccination or re-vaccination was not necessarily recent. It is difficult to believe that such protection, partial though it may have been, had no effect in hindering the spread of the disease.

Whether the wider use of gamma globulin or of new prophylactic drugs, for the protection of persons who have been exposed to smallpox, is likely to influence opinion on the reliance which can be placed on outbreak control measures, in the presence of a largely unvaccinated population, remains to be seen. Although these additional new measures may well prove to be useful in certain circumstances, Kaplan (1964) has recently sounded a strong note of caution regarding their over-enthusiastic acceptance as important weapons in the control of smallpox.

The arguments for or against the existing policy of vaccination against smallpox are by no means as decisive as the protagonists in this controversy have claimed to demonstrate. The way ahead may lie in the development of an improved vaccine, devoid of the risk of occasional severe complications, in conjunction with the programme sponsored by the World Health Organisation to eradicate smallpox from the endemic areas. In the meanwhile it will continue to be necessary to keep the subject under review in this country. The Joint Committee on Vaccination and Immunisation, at its first meeting, appointed a sub-committee on Smallpox Vaccination which met on two occasions in 1963 and made recommendations. The Joint Committee accepted these recommendations and advised that, on present evidence, there is no justification for departing from the policy that children should be vaccinated as a routine, preferably in the second year of life, and that this policy could well be more completely implemented and revaccination during school life encouraged.

The Joint Committee also appointed a sub-committee on Measles Vaccination, agreed to the formation of a group to consider the prevention of tetanus and reviewed vaccination against whooping cough and the use of influenza vaccines. Each of these subjects presented to a greater or lesser degree unresolved problems. The sub-committee on Measles Vaccination concluded that information now available in respect of the complications of measles justified a recommendation that the Medical Research Council should be asked to organise trials of measles vaccines. The group on prevention of tetanus were concerned primarily with the extent to which the use of tetanus antitoxin in the treatment of injured persons could be avoided by reinforcing doses of tetanus vaccine to those previously immunised or by careful surgical techniques and antibiotic prophylaxis combined with active immunisation of those previously unimmunised. Recommendations made by this group have now been published in the British Medical Journal and Lancet (25th July, 1964) and in the Medical Officer (31st July, 1964). Arrangements are in hand to initiate further studies of the benefits and dangers of pertussis vaccines. The Joint Committee recommended no change in current advice on the use of influenza vaccines but agreed that oil adjuvant vaccine was a suitable alternative to saline vaccine for the vaccination of those special groups for which this had been recommended (Central Health Services Council, 1963).

The activities of the Joint Committee and of its various sub-committees in their first year of existence give some indication of the difficulties inherent in applying new immunological and epidemiological knowledge to practical public health policies. The rapid developments, which are occurring particularly in the immunological field, make it appear unlikely that a stable position will be reached within the near future. Doctors, therefore, should be prepared for the introduction of new immunising procedures and the modification of existing procedures and regard such changes not as evidence of vacillation or uncertainty but as necessary for the best use of the agents available. Present aims are towards the combination of antigens in multiple vaccines effective against a variety of diseases and the reduction of the number of doses needed to ensure protection. Ideally it might become possible to confer a sufficient degree of basal immunity by means of one dose of a multiple vaccine and to reinforce protection against individual diseases, as the occasion arises, by means of a subsequent dose of the appropriate single antigen. How near it will prove possible to attain this ideal in practice is likely for some time to remain a matter for speculation.

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XIX

SPECIAL SUBJECTS

(*a*) Arteriosclerotic Heart Disease

I. Mortality statistics

It is commonplace that, of assigned causes of death, arteriosclerotic heart disease is by far the most frequent. In 1962, the deaths of 81,063 males and 69,548 females were assigned to arteriosclerotic and degenerative heart disease (Table XIX.1). This figure amounts to 27 per cent of all deaths for the year. The other well recognised disturbing feature is the annual increase since "diseases of the coronary arteries" was introduced as a rubric in the Registrar General's Annual Statistical Review in 1928. There was a change in classification methods in 1940 and deaths before this date are not truly comparable with those after. However, as Tables XIX.2 and XIX.3 demonstrate, there has been a rapidly rising rate from deaths assigned to coronary disease, certainly from 1928 onwards; what happened before this date is uncertain.

TABLE XIX.1

Arteriosclerotic and degenerative heart disease (ICD Nos. 420–422)
Number of deaths, 1962

	M	F
0–24	36	25
25–44	2,012	320
45–64	24,547	7,177
65–74	24,059	17,199
75 and over	30,409	44,827
TOTAL	81,063	69,548

TABLE XIX.2

Crude death rate per million living from diseases of the coronary arteries, angina pectoris 1928–1939

Year	Death rate		Year	Death rate	
	M.	F.		M.	F.
1928	137	54	1934	370	166
1929	178	69	1935	422	193
1930	216	85	1936	483	218
1931	238	99	1937	524	240
1932	272	116	1938	570	276
1933	327	138	1939	658	303

TABLE XIX.3

Crude death rate per million living from arteriosclerotic heart disease including coronary disease

Year	Death rate		Year	Death rate	
	M.	F.		M.	F.
1940	808	374	1950	1,640	885
1941	805	348	1951	1,757	937
1942	850	365	1952	1,847	982
1943	954	396	1953	1,837	995
1944	1,065	425	1954	1,991	1,066
1945	1,137	466	1955	2,069	1,143
1946	1,129	522	1956	2,181	1,204
1947	1,245	586	1957	2,208	1,226
1948	1,264	652			
1949	1,453	765			

It is interesting to enquire into the reasons for this dramatic rise; do they represent a real increase or is the recorded rise, in part at any rate, artificial?

The increasing age of the population is usually considered to account for some of this rise in the number of deaths. Table XIX.1 sets out the number of deaths by age and sex from arteriosclerotic and degenerative heart disease in 1962. Nearly 40 per cent of the men and over 60 per cent of the women were past their mid-seventies at death. However an ageing population can only account for part of the increase since age-specific deaths have also been rising, as Table XIX.4 shows. Between 1940 and 1962 there was an increase in the death rate from arteriosclerotic heart disease in both sexes, at each age group over the age of 25.

TABLE XIX.4

Death rates per million living from arteriosclerotic heart disease including coronary disease by age and sex (1940, 1957 and 1962)

Year	Sex	Age				All ages
		25–	45–	65–	75+	
1940	M	80	1,446	4,432	6,570	808
1957	M	221	3,240	11,555	18,972	2,208
1962	M	307	4,051	13,946	25,145	2,767
1940	F	20	425	2,165	3,759	374
1957	F	28	805	5,201	10,989	1,226
1962	F	42	1,007	6,126	15,341	1,657

Another reason given for the rising death rate is improved diagnosis linked with a growing awareness of ischaemic heart disease to the point of its becoming a "fashionable" diagnosis. There is a good deal of support for this view, as Table XIX.5 demonstrates. This Table sets out by sex the standardised mortality ratios (SMR) for all arteriosclerotic and degenerative heart disease (ICD No. 420–422) by year from 1952–1962, comparing these with the S.M.R.s for arteriosclerotic heart disease (ICD No. 420), chronic endocarditis not specified as rheumatic (ICD No. 421) and other myocardial degeneration (ICD No. 422). Whilst there is very little change in total mortality in males (and a steady fall in females) there has been a pronounced rise for both sexes in deaths from arteriosclerotic heart disease and a similar fall in death from other myocardial degeneration, suggesting a transference from one assigned cause of death to the other.

However this is probably not the whole story; Table XIX.6 compares the death rates by sex per 100,000 population at ages 45–64 from arteriosclerotic heart disease and from myocardial degeneration in 1952, 1957 and 1962. At this age group the cross-compensation between arteriosclerotic heart disease and myocardial degeneration is not complete, suggesting the possibility of a real increase.

TABLE XIX.5

Standardised mortality ratios. (Base years 1950–52=100)

ICD No.	Cause of death		1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
420 422	Arteriosclerotic and degenerative heart disease ..	M	98	95	97	99	99	95	100	96	99	100	104
		F	93	91	89	90	88	82	86	82	83	84	84
420	Arteriosclerotic heart disease, including coronary disease	M	105	104	112	116	121	122	129	128	137	140	149
		F	103	103	108	115	119	119	129	130	138	144	151
421	Chronic endocarditis not specified as rheumatic ..	M	104	99	113	105	104	112	105	93	103	97	101
		F	112	105	112	102	100	116	107	105	107	111	109
422	Other myocardial degeneration	M	90	84	80	79	75	65	65	57	53	52	49
		F	88	85	79	78	74	64	66	60	57	56	53

TABLE XIX.6

Death rate per 100,000 population at ages 45–64 from arteriosclerotic heart disease and myocardial degeneration 1952, 1957 and 1962

	Sex	1952	1957	1962
Arteriosclerotic heart disease ..	M	276	324	304
	F	73	81	101
Myocardial degeneration.. ..	M	44	25	15
	F	33	18	11

Taking the evidence as a whole it seems most probable that there has been a real increase in deaths from arteriosclerotic heart disease, though probably this increase is not so great as the statistics suggest. Whatever the truth of the matter it is indisputable that the number of persons dying from arteriosclerotic heart disease is alarmingly high and that many of these are men and women in the prime of life.

There is a well-known geographical variation in mortality from arteriosclerotic heart disease in England and Wales (General Register Office, 1958). This variation is clearly demonstrated by Table XIX.7 which lists the deviations from average mortality for men and women aged 45–64 for England and Wales in 1959–61. There are more deaths from arteriosclerotic and coronary heart disease assigned to the North Western and Northern Regions, in Wales and the East and West Ridings of Yorkshire; whilst the Eastern Region has the smallest number of deaths assigned to this cause followed by the North Midland, Midland, South Western, Southern and London and South Eastern Regions. The reasons for these differences in the death rate between North and South are not understood. One factor which has come to light in the past four years is the statistical association between deaths from cardiovascular disease and hardness of water (Schroeder, 1960; Morris, Crawford and Heady, 1961); there is a positive correlation between soft water supplies and deaths from cardiovascular disease. An explanation for this finding has not been discovered so far. It would be tempting to assume that there is some common social factor or factors associated both with a high death rate from arteriosclerotic heart disease and with soft water supplies; for example, the industrialisation that was early shown to be associated with high mortality and which developed in Yorkshire and Lancashire in relation to supplies of soft water. Morris and his co-workers have examined a number of these factors, so far without significant result.

Table XIX.7 also shows an association between high death rate from arteriosclerotic heart disease and urbanisation. The highest death rates are recorded in urban areas with a population of 100,000 or more; whilst the lowest death rates are found in rural areas. As with the other mortality data, there must be uncertainty over the extent to which better diagnosis may be contributing to the higher urban death rates.

TABLE XIX.7

Geographical variation in diseases of the cardiovascular system, average death rates per thousand living and deviation from average, by sex and at ages 45–64, 1959–1961, England and Wales

	Arteriosclerotic and coronary heart disease (ICD No. 420)	
	45–64	
	M	F
England and Wales: average 1959–61	3·65	0·91
	Deviation from average	
Regions:		
Northern	0·55	0·38
East and West Ridings	0·41	0·16
North Western	0·70	0·20
North Midland	−0·43	−0·11
Midland	−0·40	−0·08
Eastern	−0·72	−0·14
London and South Eastern	−0·14	−0·15
Southern	−0·35	−0·18
South Western	−0·36	−0·06
Wales	0·56	0·16
Conurbations:		
Tyneside	0·53	0·37
West Yorkshire	1·09	0·32
South East Lancashire	0·62	0·10
Merseyside	0·91	0·38
West Midland	−0·36	−0·13
Greater London	−0·03	−0·15
Areas outside conurbations:		
Urban areas with population of 100,000 and over	0·20	0·05
Urban areas with population of 50,000 and under 100,000	0·08	0·02
Urban areas with population of under 50,000	−0·03	0·02
Rural areas	−0·57	−0·08

II. Morbidity statistics

Morbidity is not so reliable a guide as mortality to the trend of a disease. However, it is of some interest to examine the data of the Hospital In-Patient Enquiry (H.I.P.E.). Table XIX.8 shows the estimated number of discharges from hospital for arteriosclerotic heart disease from 1955–1961. The increase in discharges by more than 130 per cent poses similar questions to those raised by the mortality data: to what extent is the sharp increase due to changes in treatment, in diagnosis and in admission policy, as well as to a real increase in the disease? It is not possible to answer these questions from the information available. The hospital picture can, however, be elaborated to some extent. Table XIX.9 shows that discharges increase with age as would be expected and that this age gradient has been maintained from 1958-1961; in particular, there is no trend towards increasing admission of younger patients, if anything the trend is in the opposite direction.

TABLE XIX.8

Hospital In-Patient Enquiry
Arteriosclerotic heart disease

	1955	1956	1957	1958	1959	1960	1961
Estimated total number of discharges from hospital..	31,200	38,700	41,100	49,800	56,700	68,220	73,330

TABLE XIX.9

Hospital In-Patient Enquiry
Arteriosclerotic heart disease

Age and sex distribution. *Discharge rates per 10,000 population.* *1958 and 1961*

		15–	45–	65 and over	All ages
1958	M	2·7	32·7	61·1	15·2
	F	0·5	8·9	33·8	7·2
1961	M	3·4	47·8	81·8	21·3
	F	0·6	13·9	49·0	10·8

Table XIX.10 sets out by age, sex and hospital region, the discharge rates for arteriosclerotic heart disease in 1961. The variation between these rates from region to region is remarkable; at age 65 and over, for example, the male discharge rate for the Liverpool region is 125·3 per 10,000 population whilst it is only 51·5 per 10,000 in the Sheffield region. It is also noticeable, when the table is compared with Table XIX.7 that, in contrast to mortality, there is no general preponderance of increased discharges for arteriosclerotic heart disease in the north of the country. This suggests that discharge rates are associated with local hospital factors, such as bed availability, rather than with the number of cases of the disease in the area.

TABLE XIX.10

Hospital In-Patient Enquiry
Arteriosclerotic heart disease

Age and sex distribution. Discharge rates per 10,000 population. 1961.
By hospital region

Region	Males				Females			
	15–	45–	65 and over	All ages	15–	45–	65 and over	All ages
Newcastle	5·2	55·4	75·0	22·4	0·8	21·9	61·4	13·5
Leeds	3·6	61·3	88·6	25·7	1·0	22·0	74·5	16·3
Sheffield	2·4	32·9	51·5	14·1	0·6	10·3	31·1	7·0
East Anglian	1·6	30·8	64·9	14·6	0·0	10·1	47·9	9·8
North West Metropolitan	3·8	55·0	92·6	25·1	0·4	12·2	45·5	10·4
North East Metropolitan	4·4	55·2	104·7	26·7	1·1	14·1	51·7	12·1
South East Metropolitan	4·3	43·9	90·1	22·2	0·5	14·6	57·3	12·9
South West Metropolitan	2·1	47·6	93·2	22·6	0·5	14·1	49·6	11·6
Wessex	2·0	29·5	69·2	14·7	0·0	7·7	44·9	8·9
Oxford	0·9	43·8	89·9	19·5	0·0	7·7	46·9	9·3
South Western	2·7	35·9	67·1	17·3	0·4	9·0	35·4	8·3
Wales	1·9	45·0	69·8	19·5	0·2	14·1	38·9	9·0
Birmingham	2·8	34·7	56·3	14·4	0·1	8·6	35·5	6·6
Manchester	4·3	48·0	77·5	22·0	1·1	12·9	43·0	10·0
Liverpool	5·4	70·5	125·3	28·4	0·7	22·5	66·0	13·8
ALL REGIONS:								
All discharges and deaths	3·4	47·8	81·8	21·3	0·6	13·9	49·0	10·8

The majority of patients are admitted to general medical beds regardless of age, as Table XIX.11 shows. Out of 13,790 men aged 65 and over discharged from hospital in 1959 10,056 (83 per cent) were admitted to general medical beds. There is thus at least a suggestion that a considerable proportion of these elderly patients were in fact suffering from acute coronary artery disease.

TABLE XIX.11

Hospital In-Patient Enquiry
Arteriosclerotic heart disease

Department in which treated. (Estimated numbers.) 1959

		0–	45–	65 and over	All ages
General medicine	M	2,278	19,375	10,056	31,709
	F	406	5,512	8,434	14,352
Geriatric and chronic sick	M	0	198	1,758	1,956
	F	0	166	2,142	2,308
General practitioner	M	21	343	666	1,030
	F	..	198	499	697
Other departments	M	208	1,851	1,310	3,369
	F	62	416	863	1,341
TOTAL	M	2,507	21,767	13,790	38,064
	F	468	6,292	11,938	18,698

III. Causative factors in arteriosclerotic heart disease

Though much research has been carried out into the aetiology of arteriosclerotic heart disease and our understanding of the condition has been considerably enlarged in recent years, no precise causative factors have as yet been isolated, the correction of which is known to influence the course of the disease. Further, although morbid pathological changes are associated with overt ischaemic heart disease there is no certain means of detecting these changes before death. There are, of course, electrocardiographic and biochemical abnormalities to be found in patients with ischaemic heart disease and these are often valuable in diagnosing conditions short of clinical infarction. Sometimes these alterations from normal are found at routine examination before any clinical symptoms or signs of disease have become manifest and there was early hope that pre-symptomatic recognition might lead to successful preventive treatment. Unfortunately these hopes have not so far been realised. Apart from ignorance at the moment of what constitutes preventive treatment there is also the difficulty of applying findings which are prognostically reliable, in a statistical sense, to the individual patient. For example, the Framingham, Massachussets community study of ischaemic heart disease (Kagan, *et al.*, 1963) has demonstrated that, as a group, men aged 40–59 with high blood pressure, some electrocardiographic abnormality and raised cholesterol, when followed over a period of eight years have a greater risk of developing ischaemic heart disease than does the group with none of these abnormalities. It would, however, be incorrect to regard this statement as necessarily true in the case of each individual in the group. If some form of easily applied and well-tolerated preventive treatment were available it might be satisfactory to recommend this for all persons falling within the high risk group. The rôle of saturated and unsaturated fats, oestrogenic and androgenic hormones and of blood clotting factors are still in the investigative stage and up to the present no practical preventive lines of proved value have emerged from the mass of work that is being carried out.

There are, however, factors indirectly influencing cardiovascular mortality over which the individual can with benefit exert control. One of these factors is cigarette smoking. Doll and Hill (1956, 1964), in their investigation of doctors showed a considerable increase in mortality from ischaemic heart disease in cigarette smokers aged between 35 and 54 as compared with non-smokers, deaths increasing with the number of cigarettes smoked daily. The Framingham survey has also shown, after an eight-year follow-up, that cigarette smokers have twice the risk of non-smokers of developing the more severe manifestations of ischaemic heart disease—myocardial infarction and sudden death (Kagan, *et al.*, 1963). Hammond and Horn (1958) have shown that the probability of developing ischaemic heart disease is considerably less in ex-smokers than in those still smoking cigarettes. Similar evidence is provided by a joint study between the Framingham workers and Doyle at Albany, New York (Doyle, *et al.*, 1962), of 4,120 men free from ischaemic heart disease at first examination and observed for 8 and 6 years respectively. While the heavy cigarette smokers experienced three times the incidence of myocardial infarction and deaths from all causes as compared with the non-smokers, former cigarette smokers suffered only a similar incidence rate to the non-smokers.

Another factor is physical activity, as pointed out over a decade ago by Morris and his colleagues (Morris, *et al.*, 1953) in their study of the differential mortality

from ischaemic heart disease between London bus drivers and conductors. It seems likely that physical activity protects against ischaemic heart disease.

A third factor associated with an increased risk of death from ischaemic heart disease is high blood pressure. The Framingham Study, for example, shows that, over an eight-year period in persons aged 30–59, at entry with a systolic blood pressure of between 160–179 mm of mercury the morbidity ratio was 167 compared with a ratio of 100 for the whole age group. Blood pressure and obesity are strongly correlated but this study has demonstrated that the independent contribution of obesity to mortality is probably limited to those cases with gross obesity (Kagan, *et al.*, 1963).

Diabetes mellitus is also associated with an increased risk of ischaemic heart disease and also with obesity. Though the causal connection is not as yet clear the evidence suggests that avoiding obesity by attending to the diet and by exercise both decrease the coronary disease risk.

It is likely therefore that some of the habits associated with western civilisation—cigarette smoking, abstention from physical exertion and over-eating, leading to obesity, are associated with an increased mortality from ischaemic heart disease. In one instance at least, that of cigarette smoking, there is evidence that stopping the habit diminishes the risk of death from coronary disease.

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(*b*) Surgical Operations

From data in the Hospital In-Patient Enquiry it has been known for some years that there are approximately one and a half million non-obstetric surgical operations on hospital in-patients carried out annually in England and Wales. By inference from some diagnoses an estimate of the numbers of a very few common operations was possible but until the 1961 data became available no complete analysis had been made. The full data on 1961 are available in the Report on the Hospital In-Patient Enquiry for that year. The section contains a brief commentary on some of the more interesting findings in this analysis.

As is mentioned above the data contain no reference to obstetric operations. They also contain an anlysis of only one operation per admission although certain investigations requiring surgical techniques, e.g., biopsies, were separately analysed.

The classification used follows very closely upon that designed by the General Register Office (1956).

It should also be noted that the analysis is based upon records of operations. What was recorded on the H.I.P.E. form depends very largely upon a rather loose definition of a surgical operation. Thus there is no doubt that there has been considerable under-reporting of closed reductions of fractures and dislocations. On the other hand there is no particular reason to doubt that most so-called "major surgery" has been accurately and correctly recorded.

Table XIX.12 gives some details of a broad classification of surgery. Details are shown of some 1,439,700 surgical operations performed during 1961 which compares with 2,052,539 patients discharged from the corresponding surgical departments. The difference will have been composed of those patients who did not have a surgical operation—at least during that spell of surgical treatment. The total number of beds occupied by those patients who had a surgical operation was 53,000 compared with an average occupancy for the surgical specialties of 67,000. These figures are not strictly comparable for a few surgical operations will be carried out "from" non-surgical beds but as a rough guide it can probably be said that just over two-thirds of patients admitted to surgical beds will have a surgical operation during that admission and that they will stay in hospital rather longer, on average, than those in the same beds who do not.

Some of the particular surgical groups will now be examined in a little more detail. The headings of each of the groups should not be regarded as indicating that a surgeon of that particular specialty performed the operation.

Most of the neurosurgical operations performed on children involved the brain but in persons over 45 over half the operations involved the peripheral and sympathetic nervous systems.

Surgery of the endocrine glands is heavily weighted by thyroid surgery, most of it occurring in women between 15 and 64. There were estimated to have been 11,100 thyroid operations on women.

Ophthalmic surgery involves the extremes of life. Among children operations for the correction of strabismus are the only ones performed with any frequency. Over 65 the most common eye operation involves extraction of the lens. It is worth noting that although the female operation rate is only slightly higher than the male the disparity between the numbers of men and women in this age group is such that there were 10,200 operations on women and only 5,600 on men.

Dental operations in hospital are commonest in young adult life, almost all for removal of teeth, presumably mostly impacted "wisdom" teeth. Although not usually regarded as forming a large part of hospital in-patient surgical work, there are in fact about half as many dental operations on in-patients as there are eye operations.

Combining E.N.T. operations and operations on buccal cavity and oesophagus (other than on teeth and gums) covers a slightly wider field than is usually covered by E.N.T. surgeons. In all, there were 270,100 operations performed in these two groups in 1961. Of these 183,400 involved tonsils and/or adenoids. This accounts for the predominant number of this group of operations being on children. At 15–45 tonsillectomy is performed twice as often for women as for men. In the same group operations on the nasal septum are about three times as common among men.

The rapid growth of cardiac and arterial surgery means that the data for thoracic surgery probably does not represent the position at the present day. In 1961 out of 4,400 operations on the heart and pericardium 3,300 were classified as "operations on the valves of the heart" and 800 as "repair of congenital defect of heart". There were a further 800 operations for "repair of congenital defects of great vessels". Large scale operations on the lungs are now almost exclusively those of lobectomy and pneumonectomy.

There is an interesting disparity in the operation rate for carcinoma of the breast in men and women. Although there is some room for doubt as to how the particular operation will be classified it seems likely that there are approximately 10,000 operations for carcinoma of the breast in women. This is slightly greater than the number of deaths assigned to this cause in England and Wales; although, of course, different persons are covered in the two figures. For males on the other hand there were probably more than 400 operations possibly carried out for this cause, yet there are only about 70 deaths per year.

The largest single group of operations as classified in Table XIX.12 is that devoted to gastro-intestinal and abdominal surgery. There were 368,400 operations of this nature in 1961, and the patients so treated occupied about 33 beds per 100,000 population. The larger operation rate on boys than girls in children under five is due almost entirely to the greater number of herniorraphies performed, although operations for congenital pyloric stenosis also play their part. Generally the operation rate for men is higher than for women, notable exceptions being those for repair of femoral hernia, for appendicectomies (in 15–44 year age group only) and for cholecystectomy.

Among those who undergo the genito-urinary group of operations males predominate, as would be expected. The two most common operations are prostatectomy of which nearly 21,000 were performed in 1961 and circumcision of which 23,000 were performed on in-patients. (Outpatient operations were not covered in this enquiry.)

There were 203,200 gynaecological operations. Of these 43,400 involved sub-total or total hysterectomy and 32,000 involved repair of prolapse. The commonest gynaecological operation was dilatation and curettage, of which at least 60,500 were performed. Almost half of the hysterectomies and almost two-thirds of the uterine dilatation and curettage were performed on women before the usual age of the menopause.

As has been mentioned earlier orthopaedic operations possibly do not include all the closed reductions of fractures. Apart from this the commonest single orthopaedic operation performed is that for excision of semilunar cartilage of which there were 12,300. Most were on men and almost three-quarters on men between the ages of 15 and 44.

The number of beds used per 100,000 population for surgical operations remains relatively constant for males up to age 44, but rises slowly for females of similar age group. Above this age, however, there is a large rise in both sexes which increases again above the age of 64. These figures underline the fact that hospital treatment of the aged requires more beds per head of population for the acute as well as the chronic sick.

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TABLE XIX.12

Age distribution of the surgical operations recorded (number per 100,000 population) in the principal groups and the total estimated number, and number of beds used per 100,000 population

		Rates per 100,000 population						Number of beds used per 100,000 population
		0–	5–	15–	45–	65 and over	Total Estimated	
Neurosurgery	M	49·2	18·5	28·7	65·7	47·1	8,900	2·79
	F	49·0	10·2	25·5	35·8	24·8	6,600	1·99
Surgery of endocrine glands ..	M	(4·4)	*4·7*	11·7	17·2	(3·9)	2,400	0·45
	F	(2·9)	*3·1*	74·1	70·2	22·3	12,000	2·25
Ophthalmic operations	M	266·3	226·5	61·8	134·0	432·1	35,500	5·92
	F	279·4	162·3	38·8	137·6	485·2	39,000	6·01
E.N.T. operations	M	87·9	261·1	236·6	180·3	98·6	44,800	4·55
	F	61·8	193·4	146·4	100·3	45·9	28,700	2·80
Operations on teeth and gums..	M	32·6	96·2	97·4	52·4	34·8	16,600	0·79
	F	28·6	94·2	140·6	65·0	23·8	21,000	0·85
Other operations on buccal cavity* and oesophagus	M	933·3	1842·2	120·5	49·2	50·1	97,700	5·88
	F	767·5	1875·4	194·7	42·7	46·2		5·77
Thoracic surgery	M	22·7	20·2	27·8	96·3	58·9	10,400	5·22
	F	22·2	16·3	30·6	35·4	8·3	6,200	2·70
Breast surgery	M	(1·1)	(2·6)	4·6	5·9	9·8	1,100	0·14
	F	(2·9)	*3·4*	126·0	171·0	127·8	26,500	4·17
Gastro-intestinal and abdominal surgery	M	726·1	645·2	761·1	1328·2	1323·9	209,500	37·62
	F	236·8	519·5	685·3	740·1	857·7	158,900	29·09
All genito urinary surgery ..	M	915·0	317·8	116·1	365·2	1258·2	86,500	15·18
	F	12·8	8·6	33·6	94·4	94·8	12,600	2·59
Gynaecological surgery	F	*9·3*	20·9	1240·8	1228·0	443·2	203,200	26·52
Orthopaedic surgery	M	178·5	395·0	464·9	387·5	410·6	90,500	24·28
	F	168·6	286·7	234·3	407·2	634·5	80,700	23·11
Surgery of blood vessels	M	*9·4*	9·4	90·1	136·4	49·5	17,500	2·61
	F	13·4	8·0	188·1	195·2	41·9	31,100	3·82
Surgery of skin and subcutaneous tissues	M	266·9	215·7	243·4	174·6	151·6	48,000	7·02
	F	225·1	157·7	165·3	145·0	149·8	38,400	5·70
Other operations	M	20·3	11·5	14·7	10·9	7·8	2,900	0·41
	F	33·3	11·9	16·9	8·1	10·0	3,300	0·38
All operations	M	3513·7	4066·6	2280·0	3003·8	3936·9	672,300	112·86
	F	1913·6	3371·6	3341·0	3476·0	2976·6	677,400	117·75
ALL OPERATIONS:								
Number of beds per 10,000 population	M	78·3	92·1	79·2	137·9	255·7		
	F	53·3	71·1	95·8	149·9	197·2		

* This heading includes tonsillectomy
Rates based on number of less than 10 sampled cases are shown in brackets
Rates based on numbers of 10 and less than 20 sampled cases are shown in italics.

(c) Postgraduate Medical Education

In last year's Report an attempt was made to give some of the background to the development of postgraduate medical education and, in particular, to the rôle of regional hospitals in this work. It is now the intention to review the progress which has been made in this field since schemes were launched early in 1962 by Regional Hospital Boards in conjunction with the universities and with the aid of grants from the Nuffield Provincial Hospitals Trust and the King Edward's Hospital Fund for London.

There is no doubt that continuing medical education both for hospital medical staff and for general practitioners is now generally accepted as a necessity of modern medicine. The change that was if not initiated, at least greatly accelerated by the action of the Trust was the introduction of regional organisation. General practitioner courses, specialty training programmes and local hospital demonstrations and lectures were common, but a general need for organisation had not been met hitherto.

The substantial sums made available from the two voluntary services have been fully committed and, with this aid schemes of postgraduate medical education have been started in most regions. The Nuffield and King Edward's Funds grants stimulated interest and provided a most valuable impetus in the provision of much needed facilities in Regional Board hospitals. Thought was given during the year to the situation which would arise when the voluntary funds were expended, and the Ministry of Health and the University Grants Committee agreed on the way in which Exchequer funds were to be made to maintain the momentum provided by the grants already made available and to expand and develop the regional and local schemes. There are two main items of expenditure to be considered, one is the improvement of physical facilities at hospitals, of libraries, lecture rooms and the like, and this type of accommodation receives mention in the Department's Building Note No. 18. The other item is the provision for directing staff regionally through Postgraduate Deans and locally by clinical tutors whose honoraria would be reimbursed to the universities by Regional Hospital Boards. Even more gratifying is the fact that in a number of areas schemes are being developed or supported by voluntary funds raised locally, largely from the profession itself. The existing schemes depend very largely upon local voluntary effort, usually by one or more of the hospital consultants.

The schemes which have been started are not uniform, but they have given some indication of how progress may be made in this field. This variability is of value for experiment is desirable and the most suitable pattern has not clearly emerged. Some Boards have planned elaborate and comprehensive schemes, a few have started very little. To a large extent the working pattern for the organisation of postgraduate training is as previously suggested with, at regional level, a joint organisation between the university, Regional Hospital Board, and in many instances, with general practitioner representation; some of the links are tenuous. A Regional Director, as distinct from the Postgraduate Dean, has been appointed in one Region and a Regional Adviser on Postgraduate Medical Education is proposed in another. A number of clinical tutors, area organisers or area directors have been appointed at local levels, paid honoraria of varying amounts and with appointments of variable tenure. In one Region the university is developing a Department of Postgraduate Medical Studies. Arrangements in the hospitals include, or will include, provision for seminars, clinico-pathological conferences, ward rounds, library and laboratory facilities, and the like, intended for junior hospital medical staff and for general practitioners, and generally making provision for overseas graduates; it is the general intention that all specialties should be covered. In one Region, at least, medical programmes are put out locally after normal transmission hours on television, details and times being circulated to those concerned by the television authority on behalf of the Regional postgraduate medical education organisation.

It is in this sort of way that the funds from the voluntary sources have been used, but in particular, mention should be made of two schemes which have received the support of the Nuffield Provincial Hospitals Trust. The North Staffordshire Medical Institute was granted a loan in recognition of the local initiative and enterprise shown at Stoke-on-Trent where a successful appeal had been launched in 1961 to provide facilities for postgraduate medical education, in advance of the wide interest which has since developed. The loan from the Nuffield Trust enabled the development to proceed without delay.

The Nuffield Trust also granted money to the Exeter Postgraduate Medical Institute, and this too received special consideration in that it was the proposals from the group of consultants at Exeter which aroused the Trust's interest in this part of the postgraduate field. The grant has enabled a Director of Postgraduate Medical Education to be appointed and contributed towards building up the library; office accommodation is provided in the university and teaching facilities are available in the Royal Devon and Exeter Hospital where the Director has a clinical appointment as consultant. The first course of ten week's duration was started in October and covered a wide variety of subjects suitable for general practitioners or other medical graduates, British or from overseas. The institute is expected to provide a focal point for the encouragement of medical research in the area.

A further conference of representatives of bodies interested in postgraduate medical education was held at the Ministry of Health in November. The progress which had been made since the previous conference in April, 1962, was reported, and the financial arrangement which would ensure the continuation of work and development in this field where the voluntary funds were exhausted were discussed. It was the general view of the conference that Regional Hospital Boards should continue to formulate schemes for the continuing type of medical education in conjunction with the universities, based on their own experience or upon information collected centrally; the meeting favoured the setting-up of a small, central advisory committee with membership from some of the interested bodies.

Section 48 of the National Health Service Act, 1946, made provision for the introduction of refresher courses for general practitioners. These began in 1948 and since that time attendances at approved courses attracting contributions towards fees and expenses have continued to increase. During the year, also, details were made known of the agreement which had been reached between representatives of the profession and the Minister, that from 1st April, 1963, for Great Britain a sum of £250,000 per annum would be set aside from the Central

Pool of general medical practitioners' remuneration and credited to a Post-Graduate Education Fund. From this Fund payments would be made to general practitioners who had attended postgraduate courses in accordance with a published scheme. In the first five-year period, in order to qualify for a payment of £60 from the Fund a practitioner would have

(*a*) to have completed 10 attendances at half-day sessions of refresher courses, these could be any refresher courses for which assistance is available under Section 48 of the National Health Service Act towards the fees and expenses, or other refresher courses which the Minister may recognise for the purpose of this scheme and which have been notified separately to doctors and to Executive Councils, or could be any unpaid post in a hospital giving regular experience under consultant supervision and (normally) supernumerary to establishment. For this last, evidence is required of regular attendance broadly on the basis of one half day each week during a year, excluding holidays, etc., or its equivalent, e.g., one whole day a week over a six month period;

(*b*) to be, at the date of application, under 70 years of age;

(*c*) not already during the five-year period received a payment from the Fund.

By the end of 1963, 690 practitioners in England and Wales had claimed the grant.

Specialty training has always been a primary concern of the Royal Colleges. During the year the Royal College of Surgeons published a report on training in the surgical specialties and established a regional organisation to promote local action. It was known that the Royal College of Physicians was also considering this subject. The system of training exists in the succession of hospital posts in the clinical specialties, but some others, notably radiology and chemical pathology require and have arrangements for additional scientific training in the course of registrar posts. It has been necessary to make special arrangements to expand these opportunities.

Daniel Drake, M.D., wrote in 1832 in his Practical Essays on Medical Education and Medical Profession in the United States, "The physician who neglects his studies for the first few years after graduation, will seldom resume them", and "The young physician is now aware how soon his elementary knowledge will fade from his mind, when he ceases to study. That which he possesses, can only be retained by new additions. He cannot remain stationary; the moment he ceases to acquire, he loses . . .". These are precepts equally applicable today.

(*d*) Locally Organised Research

The scheme for locally organised or decentralised research financed by the Ministry through Regional Hospital Boards and Boards of Governors came into operation in 1958–59 as part of the larger arrangements for the encouragement of clinical research which had included some years earlier the setting-up of the Clinical Research Board of the Medical Research Council. Its purpose was to encourage local initiative in research and thus to complement the activities of the Clinical Research Board by ensuring that an easily accessible source of support was available to launch and foster local talent. The scope of the scheme is implicit in this aim. It was not meant for the support of those making a career in research or of the continuing programmes of established research departments. These remain the responsibilities of the universities and the central research organisation. The decentralised scheme was to be concerned mainly with specific and usually short-term projects arising from and closely related to day-to-day clinical practice; and its success would be judged less by the occasional discovery of exceptional talent than by the extent of its influence in widening the opportunities for modestly worthwhile work throughout the health service as a whole.

The scheme is open to all Boards wishing to participate, though in the distribution of the available resources account is taken of the amount of local endowment money. Allocations are earmarked for research and are based as far as possible on Boards' own estimates of their needs for the following year (although allocations are made annually, Boards have been advised that this should not deter them from accepting responsibility for suitable projects which are expected to last for several years). Within their allocation Boards are free to support work at their own discretion, subject only to the professional advice of the local research committees which they were asked to set up for the purpose and to the scheme's general limitations as notified to them by the Ministry. Thus reliance is placed on the local research committees to ensure that approved projects are likely to be of value and are carried out as economically as possible, the Ministry's part being merely to scrutinise the lists so as to see whether items are within the scope of the scheme or would more suitably be submitted to the Clinical Research Board. Hitherto, the scheme has been almost entirely concerned with research in hospitals but it is being gradually extended, through the local research committees, to cover projects put up by general practitioners and there is no reason why those of local health authorities should not also be included. Indeed, there would seem to be good opportunities for collaboration between the three branches of the service, particularly in the field of epidemiological research and in studies of the provision and use of medical care.

The scheme made a modest start in its early years but, as can be seen from the Table which follows, there has since been a rapid expansion in both the number of participating centres and the amount of money to be divided between them. In the current year virtually all the Regional Hospital Boards and some two-thirds of the teaching hospitals are receiving support in varying degrees. Indeed, the decentralised scheme is now the mainstay of research in Regional Hospital Boards and an increasingly important supplementary source in the less well-endowed teaching hospitals. That this trend represents a genuine increase in the volume of work and not a mere replacement of one form of support by another is evidenced by the similar upward trend of expenditure on research from non-exchequer funds and other exchequer sources over the same period.

Allocations and number of participating centres (England and Wales)

	No. R.H.B.s	Total R.H.B.s	No. B.G.s	Total B.G.s	Grand Totals
		£		£	£
1958–59	9	33,000	3	3,000	36,000
1964–65	14	211,000*	29	211,000*	448,000

* Initial allocations

It was always intended that the scheme should be reviewed periodically when there had been time for it to get properly under way and the first of these reviews, covering the Regional Hospital Boards, has now been completed, in association with the Clinical Research Board and the local research committees. A conference of representatives of these committees, the Clinical Research Board and staff of the Ministry was held during the year and will be repeated. There seemed little doubt that the scheme had been found to fill a need and there was general agreement that the increase in the volume of work had been accompanied by a most encouraging improvement in its quality. These results are certainly due above all to the enthusiasm of the local committees themselves, which have interpreted their responsibilities as going far beyond those of the conventional grant-giving body. More and more, by such means as the interviewing of applicants, visits to outlying hospitals and the offer of specialised help from academic departments, they have begun to establish the wide personal contacts which are the best encouragement to the young and untried worker in research. This seems often to have led to a closer association between teaching and regional hospitals and in a few places to the formation of a joint research committee, an arrangement which has worked well where it has been tried and which it is hoped may be gradually extended.

It would be fair, then, to say that the scheme has made a promising start but it is equally clear that the provision of more readily accessible opportunities may reveal a large reserve of potential talent which has not yet been tapped. The indications are that, as experience is gained and the problems of staffing and accommodation in hospitals become easier, a steady increase in the amount of useful work may be expected.

APPENDIX A

TABLES OF VITAL STATISTICS: ENGLAND AND WALES

TABLE A.1

(incorporating Table A.1)

Population of England and Wales (in thousands)

Year	Males	Females	Persons	Note*
1901	15,729	16,799	32,528	Census
1941	20,141	21,607	41,748	Mid-year total population
1951	21,044	22,771	43,815	Mid-year home population
1961	22,353	23,852	46,205	
1962	22,660	24,049	46,709	
1963	22,832	24,191	47,023	

* See Explanatory Notes in Registrar General's Statistical Review.

TABLE A.2

Age-group	Mid-1963 home population (in thousands)			Proportion per 1,000 persons			
	Persons	Male	Female	1953	1961	1962	1963
0–	3,899	2,001	1,898	77	79	81	83
5–	3,384	1,737	1,647	82	70	71	72
10–	3,386	1,737	1,649	65	79	74	72
15–	3,653	1,863	1,790	62	69	75	78
20–	2,979	1,485	1,494	64	62	63	63
25–	5,893	3,006	2,886	146	126	126	125
35–	6,404	3,203	3,201	144	136	136	136
45–	6,203	3,040	3,163	141	140	137	132
55–	5,572	2,612	2,960	106	118	118	118
65–	3,625	1,462	2,163	75	77	77	77
75–	1,706	593	1,113	33	37	37	36
85 and over	318	91	227	5	6	7	7

TABLE A.3

Births and deaths, stillbirths and infant mortality since 1941

	Live births		Stillbirths	Deaths		
	Number annually	Per 1,000 population	Per 1,000 total births	Number annually	Per 1,000 population	Infant mortality rate per 1,000 live births
1941–45	669,269	15·9	30·5	499,403	12·8	49·8
1946–50	780,933	18·0	24·0	500,128	11·8	36·4
1951–55	675,420	15·3	23·0	514,231	11·7	26·9
1956–60	739,587	16·4	21·4	523,393	11·6	22·6
1960	785,005	17·2	19·8	526,268	11·5	21·8
1961	811,281	17·6	19·0	551,752	11·9	21·4
1962	838,736	18·0	18·1	557,636	11·9	21·7
1963 (p)	854,055	18·2	17·2	572,868	12·2	21·1

NOTE: Live birth rates for 1941–49 are based on total population, i.e., including armed forces and mercantile marine at home and abroad. For all other years they are based on home population.

Deaths include those of non-civilians registered in England and Wales.

Death rates are for civilians only until the end of 1949. For all other years they are based on home population.

Infant mortality is based on related births prior to 1957.

TABLE A.4

Death rates per thousand population (England and Wales)

Age-group	1953		1963		Percentage change 1953–1963	
	Males	Females	Males	Females	Males	Females
I.M.R.*	29·8	23·6	23·7	18·4	—20·5	—22·0
0–	7·06	5·62	5·97	4·67	−15·4	−16·9
5–	0·52	0·38	0·44	0·28	−15·4	−26·3
15–	1·00	0·57	0·99	0·39	−1·0	−31·6
25–	1·37	1·07	1·10	0·74	−19·7	−30·9
35–	2·61	2·11	2·47	1·79	−5·4	−15·2
45–	7·81	4·79	7·45	4·50	−4·6	−6·1
55–	22·2	11·6	22·6	10·9	+1·8	−6·0
65–	53·7	32·1	55·3	30·5	+3·0	−5·0
75–	123	90·7	128	88·6	+4·1	−2·3
85 and over	258	219	283	223	+9·7	+1·8

* Per thousand live births.

TABLE A.5

Principal causes of death, England and Wales

ICD No.	Cause of death	Average 1951–1953	1961	1962	1963
001–008	Tuberculosis, respiratory	9,760	3,002	2,774	2,609
010–019	Tuberculosis, other forms	1,338	332	314	351
020–029	Syphilis	1,376	900	822	820
040, 041	Typhoid and paratyphoid fever	13	2	7	5
045–048	Dysentery	49	34	28	35
050	Scarlet fever	9	3	2	2
055	Diphtheria	24	10	2	2
056	Whooping cough	292	27	24	36
057	Meningococcal infections	293	130	138	146
080	Acute poliomyelitis	262	59	18	7
084	Smallpox	6	..	26	..
085	Measles	233	152	39	127
Rem. 001–138	Other infective and parasitic diseases	1,141	988	977	887
	Malignant neoplasms:				
151	Stomach	14,384	13,788	13,596	13,681
162, 163	Lung and bronchus	14,148	22,810	23,779	24,434
170	Breast	8,180	9,367	9,430	9,512
171–174	Uterus	3,992	3,981	4,015	3,969
204	Leukaemia and aleukaemia	2,030	2,645	2,707	2,830
Rem. 140–205	Other malignant neoplasms	44,481	47,324	48,081	47,990
260	Diabetes mellitus	3,412	3,869	3,811	3,804
330–334	Vascular lesions affecting central nervous system	68,634	77,023	78,297	80,340
420	Arteriosclerotic heart disease, including coronary disease	61,483	95,775	102,478	107,856
480–483	Influenza	8,008	7,102	3,308	3,214
490–493, 763	Pneumonia	21,573	29,979	31,672	36,741
500–502	Bronchitis	31,923	31,363	33,293	35,332
540, 541	Ulcer of stomach and duodenum	5,380	4,405	4,692	4,341
543, 571, 572, 764	Gastro-enteritis	2,576	2,645	2,619	2,662
590–594	Nephritis and nephrosis	5,765	3,498	3,423	3,179
610	Hyperplasia of prostate	4,359	3,075	2,901	2,479
640–689	Complications of pregnancy, childbirth and puerperium	495	274	299	243
750–759	Congenital malformations	4,448	5,196	5,426	5,249
Rem. 001–795	All other diseases	177,257	158,680	154,741	155,362
E810–E835	Motor vehicle accidents	4,334	6,634	6,306	6,351
E870–E888	Accidental poisoning	282	464	573	672
E963, E970–E979	Suicide	4,520	5,201	5,589	5,715
Rem. E800–E999	All other accidents and violence	10,338	11,015	11,429	11,885
	ALL CAUSES	516,798	551,752	557,636	572,868

TABLE A.6

Mortality from principal causes

ICD No.	Cause	Standardised Mortality ratios (base years 1950–1952 taken as 100)				Death rate per million
		1953	1961	1962	1963	
001–019	Tuberculosis (all forms)	66	24	22	21	62·9
020–029	Syphilis	83	56	51	50	17·4
057	Meningococcal infections	105	44	45	47	3·10
140–205	Cancer, all forms	100	102	102	103	2178
162–163	Cancer, lung	112	154	159	162	519·6
204	Cancer, leukaemia	109	125	127	132	60·2
260	Diabetes mellitus	87	94	92	91	80·9
410–443	Diseases of heart	92	91	91	93	3977
480–483	Influenza	88	86	39	38	68·3
490–493, 763	Pneumonia (all forms)	105	129	134	154	781·3
540–542	Peptic ulcer	93	73	76	70	93·4
	Deaths from violence:					
E810–E835	Motor vehicle accidents	101	144	135	135	135·1
E870–E888	Accidental poisoning, by solids and liquids	106	160	196	229	14·3
E963, E970–E979	Suicide	106	108	115	118	121·5
	ALL CAUSES	95	92	92	94	12183

TABLE A.7

Outcome of pregnancies: England and Wales

Year	Total (live and still) births	Maternal mortality from childbearing (ICD 640–9, 660–89)				Maternal mortality from abortion (ICD 650–2)			
		Deaths	Death rate per 1,000 births			Deaths	Rate per 1,000 births	Rate per million women aged 15–44	
			Infections (640, 641, 681, 682, 684)	Others	Total			Septic (651)	Other (650,652)
1953	700,053	419	0·09	0·50	0·60	76	0·11	4	4
1959	764,402	243	0·06	0·26	0·32	47	0·06	3	2
1960	800,824	248	0·04	0·27	0·31	62	0·08	3	3
1961	827,008	220	0·04	0·23	0·27	54	0·07	4	2
1962	854,200	242	0·05	0·23	0·28	57	0·07	3	3
1963	869,044	194	0·03	0·19	0·22	49	0·06	3	2

TABLE A.8

Causes of death ascribed to pregnancy and childbirth: England and Wales

ICD No.	Cause of death	1953	1959	1960	1961	1962	1963
642	Toxaemia of pregnancy	132	50	60	46	50	43
643, 644	Antepartum haemorrhage	6	3	1	2	4	6
645	Ectopic pregnancy	35	12	17	12	22	16
646–649	Other complications of pregnancy	10	28	20	20	26	25
651	Abortion with sepsis	39	29	33	32	28	32
650, 652	All other abortion	37	18	29	22	29	17
670	Antepartum haemorrhage complicating delivery	33	18	24	18	19	11
671, 672	Postpartum haemorrhage	51	23	19	23	20	21
660, 673–678	Other deaths from delivery	68	48	65	54	47	33
682, 684	Puerperal phlebitis, thrombosis and pulmonary embolism	49	30	27	24	34	20
640, 641, 681	Other sepsis of pregnancy, childbirth and puerperium	17	17	8	6	12	8
685, 686	Puerperal toxaemia..	11	7	3	9	3	3
680, 683, 687–689	Other complications of puerperium	7	7	4	6	5	8
	Total	495	290	310	274	299	243
	Total excluding abortion	419	243	248	220	242	194

TABLE A.9

Deaths of women not classed to pregnancy or childbearing, but certified as associated therewith, 1959–1963

ICD No.	Cause of death	1959	1960	1961	1962	1963
001–138	Infective and parasitic diseases	4	2	2	3	2
140–239	Neoplasms	9	16	5	11	12
240–289	Allergic, endocrine system, metabolic and nutritional diseases	3	2	1	6	2
290–299	Diseases of blood and blood-forming organs	..	..	2	4	1
300–326	Mental, psychoneurotic and personality disorders	..	1	..	..	..
330–398	Diseases of the nervous system and sense organs	5	3	5	4	4
400–416	Rheumatic fever and chronic rheumatic heart disease	15	15	19	16	17
420–434	Other diseases of the heart	3	6	4	4	6
440–447	Hypertensive disease	3	1	1	..	..
450–468	Other diseases of the circulatory system	4	3	..	2	2
470–527	Diseases of the respiratory system	17	6	16	8	5
530–587	Diseases of the digestive system	7	10	6	4	6
590–637	Diseases of the genito-urinary system	3	..	..	6	..
690–716	Diseases of the skin and cellular tissue	..	..	..	..	..
720–749	Diseases of the bones and organs of movement	1	3	1	..	..
750–759	Congenital malformations	4	5	1	6	4
E800–E999	Accidents, poisoning and violence	4	2	8	3	6
	TOTAL	82	75	71	77	67
	Associated with abortion (included above)	7	5	3	2	6

INFANT MORTALITY

TABLE A.10

England and Wales: infant mortality by age and legitimacy, 1958 to 1963

	Deaths per 1,000 live births					
	1958	1959	1960	1961	1962	1963
ALL CAUSES						
ALL INFANTS:						
Under 4 weeks ..	16·2	15·9	15·5	15·3	15·1	14·3
4 weeks–3 months	2·6	2·4	2·5	2·4	2·5	2·7
3–6 months	2·1	2·1	2·1	2·0	2·3	2·4
6–12 months.. ..	1·7	1·8	1·6	1·7	1·8	1·8
Total under 1 year	22·5	22·2	21·8	21·4	21·7	21·1
ALL MALE INFANTS:						
Under 4 weeks ..	18·3	17·7	17·8	17·4	17·3	16·2
4 weeks–3 months	2·8	2·7	2·8	2·7	2·8	3·0
3–6 months	2·3	2·3	2·2	2·1	2·6	2·6
6–12 months.. ..	1·9	1·9	1·7	1·7	1·8	1·9
Total under 1 year	25·3	24·5	24·5	23·9	24·5	23·7
ALL FEMALE INFANTS:						
Under 4 weeks ..	13·8	14·0	13·2	13·2	12·8	12·2
4 weeks–3 months	2·3	2·1	2·3	2·1	2·2	2·3
3–6 months	1·9	2·0	1·9	1·9	2·0	2·2
6–12 months.. ..	1·6	1·7	1·5	1·7	1·7	1·7
Total under 1 year	19·6	19·8	18·9	18·9	18·7	18·4
ILLEGITIMATE INFANTS:						
Under 4 weeks ..	20·6	20·7	19·5	19·5	20·4	19·2
4 weeks–3 months	3·7	2·7	3·0	2·4	2·9	3·1
3–6 months	2·1	2·4	2·4	2·1	2·4	2·3
6–12 months.. ..	1·4	1·6	1·5	1·3	1·5	1·4
Total under 1 year	27·8	27·4	26·4	25·3	27·2	26·0
LEGITIMATE INFANTS:						
Under 4 weeks ..	15·9	15·6	15·3	15·1	14·7	13·8
4 weeks–3 months	2·5	2·4	2·5	2·4	2·5	2·7
3–6 months	2·1	2·1	2·1	2·0	2·3	2·4
6–12 months.. ..	1·7	1·8	1·6	1·7	1·8	1·8
Total under 1 year	22·3	21·9	21·5	21·2	21·3	20.8

TABLE A.11

England and Wales: causes of infant mortality; death rate per 100,000 live births

ICD No.	Cause of death	1953	1959	1960	1961	1962	1963
056	Whooping cough..	24·4	2·1	3·3	2·3	2·1	3·4
001–019	Tuberculosis..	9·2	2·0	1·3	1·5	0·72	0·47
085	Measles..	8·3	3·1	0·76	3·6	0·48	2·8
780.2–780.4	Convulsions..	2·3	0·53	0·25	1·0	0·48	0·47
500–502, 490–493, 763	Bronchitis and pneumonia	492	349	353	324	360	389
571, 764	Gastro-enteritis	97·2	40·2	43·7	47·7	53·7	46·5
750–759	Congenital malformations..	429	454	452	444	458	420
774, 776	Immaturity	518	385	391	373	356	334
	Immaturity mentioned as associated condition	412	441	425	434	414	398
760, 761	Injury at birth	268	247	232	252	222	228
762	Asphyxia and atelectasis	364	362	341	326	319	294
770	Haemolytic disease	59·6	48·1	47·4	41·2	42·1	40·0
E924, E925	Accidental suffocation	29·5	18·7	17·1	14·5	19·1	17·0
	Other causes	376	310	297	313	336	338
	ALL CAUSES	2,677	2,222	2,181	2,144	2,168	2,113

TABLE A.12

England and Wales: causes of neonatal mortality
Death rate at ages under 4 weeks per 100,000 live births

ICD No.	Cause	1953	1959	1960	1961	1962	1963
001–138	All infective and parasitic diseases	5	3	2	2	3	2
500–2	Bronchitis	6	3	4	3	4	2
763	Pneumonia	130	100	93	87	91	80
764	Diarrhoea	9	6	6	8	7	7
774–6	Immaturity	508	381	386	368	351	331
750–9	Congenital malformations	267	284	287	280	296	272
762	Asphyxia and atelectasis	359	359	338	323	316	291
773	Congenital debility and ill-defined causes	30	39	48	54	55	59
	Other causes	453	412	389	409	387	381
	ALL CAUSES	1,766	1,587	1,553	1,534	1,509	1,425

TABLE A.13

England and Wales: infant and child mortality 1936–1963

	Stillbirths and deaths under 1 week Perinatal mortality	Under 4 weeks	Under 1 year	1 year	2 years	3 years	4 years
	per 1,000 total births	per 1,000 live births*		Death rate per 1,000 living			
1936–40	59·2	29·2	55·3	8·66	4·23	3·13	2·68
1941–45	48·6	26·0	49·8	5·85	3·21	2·60	2·18
1946–50	39·8	21·1	36·3	2·99	1·64	1·25	1·05
1951–55	37·6	18·0	26·9	1·95	1·15	0·85	0·67
1956–60	34·9	16·2	22·6	1·45	0·89	0·69	0·57
1959	34·1	15·9	22·2	1·44	0·87	0·71	0·56
1960	32·8	15·5	21·8	1·38	0·87	0·64	0·52
1961	32·0	15·3	21·4	1·50	0·95	0·65	0·55
1962	30·8	15·1	21·7	1·37	0·82	0·66	0·54
1963	29·3	14·3	21·1	1·48	0·85	0·65	0·59

* Based on related live births prior to 1957.

INFECTIOUS DISEASES

TABLE A.14

England and Wales: notifications of infectious diseases

	Number originally notified				Number after correction of diagnosis			
	1960	1961	1962	1963	1960	1961	1962	1963
Anthrax	*	9	9	14	*	8	8	14
Continued and relapsing fevers	1	1	0	0	1	0	0	0
Diphtheria	157	177	70	48	49	51	16	33
Dysentery	48,313	23,390	34,171	36,215	43,268	20,412	30,889	31,731
Acute encephalitis (infective)	143	124	111	135	144	118	113	125
Acute encephalitis (post-infectious)	118	157	121	166	116	158	119	165
Erysipelas	2,981	2,250	1,788	1,751	2,954	2,237	1,789	1,739
Food poisoning	10,540	10,904	7,505	9,126	7,732	7,833	5,150	5,856
Malaria (contracted at home)	..	..	..	1	..	..	..	1
Measles	159,536	763,857	184,716	601,473	159,315	763,465	184,757	601,111
Meningococcal infection	998	953	844	698	630	651	575	606
Ophthalmia neonatorum	1,076	939	1,027	977	1,063	932	1,017	970
Paratyphoid fevers	247	278	138	356	239	251	118	340
Pneumonia (acute primary and influenzal)	14,925	18,807	12,793	14,258	14,543	18,452	12,529	14,170
Acute poliomyelitis (paralytic)	323	838	260	65	257	705	211	39
Acute poliomyelitis (non-paralytic)	217	256	80	21	121	169	59	12
Puerperal pyrexia	8,909	8,327	7,191	6,562	8,896	8,337	7,148	6,486
Scarlet fever	32,332	20,127	15,417	17,522	32,166	19,984	15,303	17,437
Smallpox	2	1	66	..	1	1	63	..
Typhoid fever	105	106	127	257	89	93	127	242
Typhus fever (scrub typhus)	..	1	..	3	..	1	..	2
Whooping cough	58,217	24,562	8,406	34,843	58,030	24,469	8,347	34,736

* Not notifiable prior to 1st December, 1960.

TABLE A.15

Total corrected notifications by sex and age, excluding Port Health Districts, 1963: England and Wales

		Age							Unstated	All ages
		0–	1–	3–	5–	10–	15–	25 and over		
Scarlet fever	M	47	724	1,856	4,774	905	328	95	28	8,757
	F	57	678	1,776	4,713	1,012	288	129	27	8,680
Whooping cough	M	2,013	4,381	3,814	5,125	793	104	143	54	16,427
	F	2,104	4,599	4,276	5,936	896	201	233	64	18,309
Diphtheria	M	0	1	4	0	0	0	7	10	22
	F	0	1	0	6	3	0	1	0	11
Measles	M	10,467	72,513	83,155	128,175	8,172	2,188	940	1,040	306,650
	F	10,604	69,041	80,158	121,847	8,176	2,388	1,228	1,019	294,461
Acute poliomyelitis, paralytic and non-paralytic	M	1	8	4	8	2	2	9	..	34
	F	..	6	3	3	2	2	1	..	17
Dysentery	M	704	2,471	2,078	4,553	1,639	918	2,966	207	15,536
	F	645	2,066	1,759	4,170	1,315	1,529	4,434	277	16,195
Meningococcal infection	M	101	87	41	41	29	33	33	3	368
	F	65	46	23	29	14	23	37	1	238

		0–	5–	15–	45–	65 and over	Unstated	All ages
Typhoid and paratyphoid fevers	M	33	65	139	42	4	5	288
	F	33	60	141	39	17	4	294
Acute pneumonia	M	1,327	772	1,463	2,245	1,761	80	7,648
	F	1,055	623	1,245	1,528	2,004	67	6,522
Erysipelas	M	15	26	160	380	170	10	761
	F	12	17	188	451	290	20	978

APPENDIX B

TABLES RELATING TO TUBERCULOSIS: ENGLAND AND WALES

TABLE B.1

England and Wales: deaths from tuberculosis per annum, including those of non-civilians

Year	Respiratory			Other forms		
	Males	Females	Persons	Males	Females	Persons
1851–1860..	23,931	26,962	50,893	8,311	6,683	14,994
1861–1870..	25,696	27,247	52,943	9,078	7,323	16,401
1871–1880..	26,177	25,333	51,510	10,082	8,165	18,247
1881–1890..	24,646	22,751	47,397	10,380	8,820	19,200
1891–1900..	23,434	19,188	42,622	10,181	8,860	19,041
1901–1910..	22,595	17,093	39,688	8,838	7,990	16,828
1911–1920..	21,555	17,220	38,775	6,614	6,007	12,621
1921–1930..	17,513	14,127	31,640	4,057	3,682	7,739
1931–1939..	14,504	10,755	25,259	2,638	2,334	4,972
1940–1944..	13,141	8,804	21,945	2,357	2,132	4,489
1945–1949..	11,644	7,592	19,236	1,695	1,521	3,216
1950–1954..	6,730	3,356	10,086	714	633	1,347
1955–1959..	3,285	1,197	4,482	269	246	515
1960	2,342	763	3,105	160	170	330
1961	2,240	762	3,002	166	166	332
1962	2,101	673	2,774	181	133	314
1963	2,022	587	2,609	169	182	351

NOTE: Deaths for 1851–1939 according to classification in use before 1940. (4th Revision.)
Deaths for 1940–1963 according to classification in use from 1958. (7th Revision.)

TABLE B.2

England and Wales: Tuberculosis: Standardised mortality ratios (base years 1950–1952 taken as 100) 1851–1963

Year	Respiratory			Other forms			All forms		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1851–1860.. ..	1,027	1,752	1,336	2,060	1,779	1,926	1,182	1,758	1,438
1861–1870.. ..	980	1,580	1,236	2,006	1,728	1,872	1,134	1,610	1,346
1871–1880.. ..	886	1,300	1,063	1,923	1,659	1,796	1,043	1,372	1,190
1881–1890.. ..	743	1,024	863	1,766	1,594	1,682	897	1,137	1,004
1891–1900.. ..	618	746	675	1,584	1,463	1,525	758	882	815
1901–1910.. ..	508	576	540	1,252	1,212	1,232	610	692	649
1911–1920.. ..	439	523	479	932	869	898	502	583	541
1921–1930.. ..	297	394	336	529	521	524	323	415	362
1931–1939.. ..	209	271	233	342	330	336	223	281	245
1940–1944.. ..	198	222	209	321	299	309	210	234	221
1945–1949.. ..	158	189	169	205	204	204	162	191	174
1950–1954.. ..	86	83	85	83	82	82	86	82	85
1955–1959.. ..	41	29	37	31	32	31	40	30	36
1960	28	19	25	18	21	19	27	19	24
1961	27	19	24	18	21	19	26	19	24
1962	25	16	22	19	16	18	24	16	22
1963	24	14	21	18	22	20	23	15	21

NOTE: Civilian mortality only in 1915–1920 and from 3rd September, 1939, to 31st December, 1949, for males and from 1st June, 1941, to 31st December, 1949, for females.

TABLE B.3

Tuberculosis: deaths by sex and age, 1963, England and Wales

	Respiratory tuberculosis	Tuberculosis of meninges and central nervous system	Other tuberculosis
MALES:			
0–	3	13	1
15–	6	4	8
25–	190	10	22
45 and over	1,823	10	101
TOTAL	2,022	37	132
FEMALES:			
0–	2	15	2
15–	4	6	3
25–	139	8	19
45 and over	442	5	124
TOTAL	587	34	148
ALL PERSONS	2,609	71	280

TABLE B.4

England and Wales: formal notifications of tuberculosis and deaths from tuberculosis of persons not notified before death, 1940–1963

Year	Formal notifications			Deaths of tuberculous persons not notified before death
	Males	Females	Persons	Persons
1940	26,260	20,312	46,572	3,395
1941	28,966	21,998	50,964	4,383
1942	29,560	23,059	52,619	3,971
1943	30,121	24,221	54,342	3,780
1944	30,044	24,269	54,313	3,468
1945	29,124	22,986	52,110	3,603
1946	29,003	22,286	51,289	3,580
1947	28,879	22,846	51,725	3,682
1948	28,863	23,713	52,576	3,551
1949	28,981	23,060	52,041	3,282
1950	26,969	22,389	49,358	2,704
1951	27,383	22,057	49,440	2,606
1952	26,557	21,536	48,093	2,239
1953	25,927	20,619	46,546	2,286
1954	23,694	18,654	42,348	1,627
1955	21,684	16,450	38,134	1,495
1956	20,683	14,821	35,504	1,465
1957	19,185	13,474	32,659	1,474
1958	17,955	11,883	29,838	1,335
1959	16,447	10,653	27,100	1,171
1960	14,351	9,254	23,605	952
1961	13,422	8,325	21,747	1,036
1962	12,766	7,553	20,519	1,016
1963	11,855	7,082	18,937	965

This table has been compiled from Annual Returns submitted in accordance with the Public Public (Tuberculosis) Regulations, 1952.

The figures differ from those given in previous Reports in that they comprise only the formal notifications of new cases and deaths of persons who had escaped notification. They exclude transfers between areas, in so far as they could be ascertained, duplicate notifications, and a few cases brought to the notice of Medical Officers of Health otherwise than by formal notification under the regulations. For details of the latter see following page.

In 1954 tuberculosis notifications were for the first time added to the quarterly returns of infectious diseases submitted by Medical Officers of Health to the General Register Office.

The number of tuberculosis notifications in 1963 recorded on these forms was:—

Males, 11,854 Females, 7,096

TABLE B.5

Tuberculosis notifications by sex and age, deaths of persons not notified and transfers between areas. 1950 to 1963

Sex	Year	Numbers of formal notifications according to age*					Deaths of tuberculous persons not notified before death	Transfers between areas other than formal notifi-cations†
		0–	15–	25–	45 and over	All ages	All ages	All ages
Respiratory tuberculosis								
Males	1950	2,504	4,727	8,613	7,908	23,752	males and females	males and females
	1951	2,482	4,663	8,782	8,330	24,257		
	1952	2,558	4,477	8,393	8,283	23,711		
	1953	2,461	4,243	7,856	8,782	23,342		
	1954	2,051	3,895	7,268	8,162	21,376		
	1955	1,785	3,411	6,444	8,001	19,641		
	1956	1,471	3,152	5,963	8,215	18,801		
	1957	1,262	2,652	5,762	7,856	17,562		
	1958	1,175	2,483	5,066	7,696	16,420		
	1959	981	2,008	4,747	7,471	15,207		
	1960	951	1,708	3,927	6,540	13,126		
	1961	851	1,473	3,652	6,254	13,230		
	1962	828	1,428	3,685	5,808	11,749		
	1963	807	1,339	3,345	5,169	10,660		
Females	1950	2,299	6,892	7,263	2,229	18,683	2,113	7,859
	1951	2,429	6,542	7,120	2,348	18,439	2,067	8,140
	1952	2,475	6,134	7,120	2,464	18,193	1,816	8,448
	1953	2,386	5,695	6,955	2,539	17,575	1,751	‡
	1954	2,022	5,260	6,054	2,261	15,597	1,330	‡
	1955	1,812	4,381	5,437	2,309	13,939	1,224	‡
	1956	1,486	3,829	4,975	2,251	12,541	1,244	‡
	1957	1,395	3,185	4,516	2,212	11,308	1,250	‡
	1958	1,245	2,728	3,854	2,144	9,971	1,106	‡
	1959	1,000	2,369	3,572	2,132	9,073	980	‡
	1960	937	1,856	2,968	1,912	7,673	820	‡
	1961	861	1,551	2,613	1,796	6,821	888	‡
	1962	847	1,358	2,266	1,625	6,096	857	‡
	1963	789	1,238	2,086	1,564	5,677	816	
Non-respiratory tuberculosis								
Males	1950	1,720	552	617	328	3,217	males and females	males and females
	1951	1,627	538	633	328	3,126		
	1952	1,379	534	580	353	2,846		
	1953	1,178	445	541	421	2,585		
	1954	979	405	586	348	2,318		
	1955	742	421	533	347	2,043		
	1956	628	362	525	367	1,882		
	1957	468	330	469	356	1,623		
	1958	387	308	507	333	1,535		
	1959	286	237	415	302	1,240		
	1960	244	190	486	305	1,225		
	1961	211	216	470	295	1,192		
	1962	189	201	513	314	1,217		
	1963	155	216	560	256	1,187		
Females	1950	1,614	836	926	330	3,706	591	677
	1951	1,497	858	866	397	3,618	539	693
	1952	1,305	688	884	466	3,343	423	590
	1953	1,082	679	835	448	3,044	535	‡
	1954	970	691	897	499	3,057	297	‡
	1955	707	570	803	431	2,511	271	‡
	1956	569	524	743	444	2,280	221	‡
	1957	519	454	778	425	2,176	224	‡
	1958	375	396	695	443	1,912	229	‡
	1959	280	318	548	434	1,580	191	‡
	1960	252	316	625	388	1,581	132	‡
	1961	198	278	602	426	1,504	148	‡
	1962	188	271	562	436	1,457	159	‡
	1963	152	249	569	430	1,400	149	‡

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* Included in the Annual Returns furnished by Local Authorities.

† Includes also a few cases brought to notice from miscellaneous sources otherwise than in preceding columns. The numbers in this column should be disregarded when a measure of new cases diagnosed during the year is required. Some transfers of cases formally notified in the same year, whose total cannot be accurately ascertained are included with the formal notifications.

‡ No longer available.

TABLE B.6

Tuberculosis: notifications per 100,000 of the population

	Respiratory		Non-respiratory	
	Average 1958–62	1963	Average 1958–62	1963
England and Wales	47·39	34·77	6·31	5·51
ENGLISH COUNTY COUNCILS				
Bedfordshire	51	40	10	6
Berkshire	37	28	6	4
Buckinghamshire	32	29	8	5
Cambridgeshire	32	27	4	3
Cheshire	27	19	4	3
Cornwall	45	30	6	6
Cumberland	53	37	8	8
Derbyshire	30	22	6	4
Devon	28	16	7	5
Dorset	35	22	5	6
Durham	49	36	7	6
Essex	36	28	5	4
Gloucestershire	40	22	8	5
Hampshire	36	30	4	3
Herefordshire	30	19	7	4
Hertfordshire	43	28	6	5
Huntingdonshire	32	24	6	6
Isle of Ely	29	17	3	6
Isle of Scilly	11	..	..	..
Isle of Wight	36	13	5	3
Kent	41	32	6	5
Lancashire	39	27	5	4
Leicestershire	25	19	7	4
Lincolnshire, Holland	21	8	6	3
Lincolnshire, Kestevan	30	14	6	5
Lincolnshire, Lindsey	30	29	7	6
London	80	63	8	8
Middlesex	47	37	6	7
Norfolk	28	16	5	6
Northamptonshire	34	23	7	5
Northumberland	47	38	7	6
Nottinghamshire	43	27	6	5
Oxfordshire	39	31	7	6
Peterborough, Soke of	37	33	7	8
Rutland	30	23	5	4
Salop	27	19	8	6
Somerset	32	23	6	4
Staffordshire	39	27	5	4
Suffolk East	27	19	6	6
Suffolk West	24	20	4	7
Surrey	36	24	4	3
Sussex East	32	29	3	4
Sussex West	23	14	3	1
Warwickshire	38	21	7	5
Westmorland	30	30	6	4
Wiltshire	31	24	9	5
Worcestershire	37	22	4	3
Yorkshire, East Riding	20	15	4	4
Yorkshire, North Riding	31	29	4	2
Yorkshire, West Riding	35	27	5	4
TOTAL	..	..	..	..

	Respiratory		Non-respiratory	
	Average 1958–62	1963	Average 1958–62	1963
COUNTY BOROUGH COUNCILS				
Barnsley	38	47	5	3
Barrow-in-Furness	43	35	4	6
Bath	33	27	6	4
Birkenhead	58	46	6	1
Birmingham	69	56	9	9
Blackburn	44	31	5	2
Blackpool	35	29	4	3
Bolton	39	29	5	3
Bootle	92	83	3	10
Bournemouth	47	25	5	7
Bradford	78	93	13	24
Brighton	47	25	3	5
Bristol	45	33	7	5
Burnley	54	20	6	6
Burton-upon-Trent	42	28	2	8
Bury	24	23	5	8
Canterbury	37	3	7	6
Carlisle	64	20	12	7
Chester	58	37	4	5
Coventry	61	46	10	10
Croydon	53	44	6	3
Darlington	49	37	1	..
Derby	47	43	5	11
Dewsbury	39	69	11	19
Doncaster	57	25	7	1
Dudley	66	59	6	6
Eastbourne	27	19	3	..
East Ham	71	47	7	7
Exeter	55	34	14	6
Gateshead	98	70	11	9
Gloucester	56	40	8	1
Great Yarmouth	26	25	4	2
Grimsby	62	35	11	12
Halifax	53	61	5	5
Hastings	51	26	5	5
Huddersfield	52	51	11	10
Ipswich	36	27	7	5
Kingston-upon-Hull	50	39	4	3
Leeds	63	52	6	4
Leicester	53	38	8	8
Lincoln	51	26	11	4
Liverpool	98	53	7	6
Luton	..	..	..	..
Manchester	65	47	6	5
Middlesbrough	67	58	5	5
Newcastle upon Tyne	78	44	12	11
Northampton	34	24	7	10
Norwich	33	30	5	..
Nottingham	72	41	8	10
Oldham	44	37	4	4
Oxford	63	65	8	23
Plymouth	64	51	6	9
Portsmouth	39	29	3	3
Preston	39	43	5	5
Reading	71	35	5	5
Rochdale	35	59	4	6
Rotherham	37	31	6	6
St. Helens	56	36	7	2

	Respiratory		Non-respiratory	
	Average 1958–62	1963	Average 1958–62	1963
County Borough Councils—*contd*				
Salford	62	45	4	..
Sheffield	59	44	7	7
Smethwick	113	91	13	23
Solihull	..	..	..	..
Southampton	58	54	7	5
Southend-on-Sea	42	37	6	5
Southport	29	34	3	1
South Shields	101	94	10	8
Stockport	39	23	4	6
Stoke-on-Trent	45	32	5	5
Sunderland	69	61	9	9
Tynemouth	71	64	9	13
Wakefield	24	13	2	3
Wallasey	53	35	9	3
Walsall	62	62	7	12
Warrington	48	29	3	3
West Bromwich	66	40	10	14
West Ham	50	39	7	5
West Hartlepool	36	33	4	4
Wigan	51	47	5	4
Wolverhampton	68	46	6	6
Worcester	47	22	5	3
York	24	23	2	6
TOTAL	..	..	..	..

TABLE B.7

Number of some non-tuberculous conditions diagnosed following examinations made by mass radiography units, distinguishing age and type of examinee: England and Wales, 1962

Code No.		Sex	AGE GROUPS											
			Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated	All ages
All	Non-tuberculous conditions	M	22	13	132	162	441	869	2,108	1,724	1,739	2,375	4	9,589
		F	43	12	231	229	386	592	1,127	862	872	1,682	1	6,037
2	Malignant neoplasms	M	..	1	3	2	12	93	536	524	523	750	..	2,444
		F	..	..	1	1	5	37	88	80	69	123	..	404
3	Non-malignant neoplasms	M	..	1	8	3	22	40	72	47	39	39	..	271
		F	1	1	9	4	18	28	66	60	34	75	..	296
4	Lymphadenopathies excluding sarcoids	M	1	..	7	2	11	6	5	3	1	..	..	36
		F	2	..	3	1	4	4	7	4	1	3	..	29
5	Sarcoids (including enlarged hilar glands) ..	M	3	..	19	63	145	73	33	11	8	12	..	367
		F	2	..	14	68	117	70	47	19	8	12	..	357
6	Congenital cardiac abnormalities and abnormalities of the vascular system	M	6	4	33	23	42	49	29	9	15	6	..	216
		F	11	7	71	37	37	44	39	10	7	5	..	268
7	Acquired cardiac abnormalities and abnormalities of the vascular system	M	10	7	61	66	169	326	752	677	739	1,275	3	4,085
		F	27	4	133	118	202	394	837	667	740	1,453	1	4,576
8	Pneumoconiosis without P.M.F.	M	2	..	1	2	38	277	628	411	378	245	1	1,983
		F	..	..	..	..	3	15	39	19	10	9	..	95
9	Pneumoconiosis with P.M.F.	M	..	..	..	1	2	5	53	42	36	48	..	187
		F	..	..	..	..	..	..	4	3	3	2	..	12

Code No.		Sex	EXAMINEE GROUPS											
			Hospital out-patients and in-patients	H.M. Forces intakes	General Practitioner referrals	School children		Contacts	Special surveys	Persons in prisons, Borstals	Factories and offices	General Public volunteers	Ante-natal cases	Psychiatric hospitals
						Mantoux test	School groups							
All	Non-tuberculous conditions	M	141	1	3,505	9	14	52	49	116	2,835	2,717	..	150
		F	197	..	1,766	19	16	89	53	63	1,185	2,413	52	184
2	Malignant neoplasms	M	30	..	1,485	..	..	7	5	13	443	447	..	14
		F	..	..	262	..	..	2	1	2	27	108	..	2
3	Non-malignant neoplasms	M	..	..	54	..	..	4	2	4	144	59	..	4
		F	1	..	54	..	1	5	2	4	84	132	2	11
4	Lymphadenopathies excluding sarcoids ..	M	1		15	..	..	..	..	..	13	7	..	..
		F	..		12	..	..	..	1	..	5	10	1	..
5	Sarcoids (including enlarged hilar glands) ..	M	..	..	87	..	1	4	2	2	183	83	..	5
		F	3	..	102	..	1	6	..	..	90	147	4	4
6	Congenital cardiac abnormalities and abnormalities of the vascular system	M	1	..	33	4	4	6	2	5	106	50	..	5
		F	2	..	41	9	5	4	2	1	105	86	8	5
7	Acquired cardiac abnormalities and abnormalities of the vascular system	M	82	1	1,354	5	9	27	23	68	1,205	1,232	..	79
		F	191	..	1,242	10	9	66	47	56	845	1,917	32	161
8	Pneumoconiosis without P.M.F.	M	25	..	442	..	..	4	9	20	701	756	..	26
		F	..	..	47	..	..	6	..	..	25	12	5	..
9	Pneumoconiosis with P.M.F.	M	2	..	35	..	..	..	6	4	40	83	..	17
		F	..	..	6	..	..	..	..	..	4	1	..	1

APPENDIX C

TABLES RELATING TO CASES SEEN AT VENEREAL DISEASE CLINICS: ENGLAND AND WALES

TABLE C.1

*Number of cases (in all stages) dealt with for the first time at any centre**

Year	Syphilis	Soft chancre	Gonorrhoea	Non-gonococcal urethritis (males only)	Other conditions†		Total columns 2–6
1950	5,979	433	17,007	..	55,068		78,487
					Requiring treatment	*Not requiring treatment*	
1951	4,506	437	14,975	10,794	11,607	26,956	69,275
1952	3,760	389	15,510	11,552	12,578	25,928	69,717
1953	3,272	347	15,242	13,157	13,566	25,619	71,203
1954	2,929	301	13,962	13,279	13,071	24,651	68,193
1955	2,711	285	14,079	14,269	13,613	24,436	69,393
1956	2,778	307	16,377	14,825	14,254	23,514	72,055
1957	2,747	254	19,620	16,066	14,332	23,032	76,051
1958	2,947	247	22,398	17,606	14,562	21,711	79,021
1959	2,252	265	24,964	20,227	15,241	23,160	86,109
1960	2,401	226	26,618	22,004	17,393	26,087	94,729
1961	2,730	227	29,519	24,472	18,562	27,567	103,077
1962	2,496	154	28,329	24,494	19,244	25,217	99,934
1963	2,371	153	27,895	25,289	19,925	28,373	104,006
1950	4,988	17	3,497	..	23,840		32,342
					Requiring treatment	*Not requiring treatment*	
1951	3,926	16	3,089	..	8,517	12,408	27,956
1952	3,362	14	3,585	..	8,916	11,560	27,437
1953	2,914	9	4,021	..	9,834	10,612	27,390
1954	2,352	8	3,574	..	10,117	9,503	25,554
1955	2,272	10	3,766	..	10,182	9,075	25,305
1956	2,363	9	4,011	..	10,939	8,835	26,157
1957	2,230	6	4,761	..	11,317	9,098	27,412
1958	1,829	12	5,489	..	12,149	9,001	28,480
1959	1,675	2	6,380	..	12,752	9,544	30,353
1960	1,545	5	7,152	..	15,199	10,876	34,777
1961	1,712	1	7,588	..	16,861	12,122	38,284
1962	1,624	3	7,109	..	16,973	12,567	38,276
1963	1,510	6	8,154	..	19,206	13,685	42,561

* Excludes cases transferred from centre to centre.
† Includes non-gonoocccal urethritis up to 1950.

TABLE C.2

Cases of acquired syphilis in Table C.1 with infections of less than one year

Year	Number		Per cent of Table C.1 cases	
	Males	Females	Males	Females
1950	2,678	1,465	44·8	29·4
1951	1,498	774	33·2	19·7
1952	891	462	23·7	13·7
1953	755	319	23·0	10·9
1954	600	208	20·5	8·9
1955	609	228	22·5	10·0
1956	587	257	21·1	10·8
1957	555	192	20·2	8·6
1958	522	182	20·9	9·9
1959	564	209	25·0	12·5
1960	819	175	34·1	11·3
1961	965	234	35·3	13·6
1962	995	229	39·9	13·5
1963	1,135	255	47·9	16·9

TABLE C.3

Cases of congenital syphilis dealt with for the first time at the treatment centres

Year	Under 1 year	1 and under 5 years	5 and under 15 years	15 years and over	Total
1950	227	141	203	652	1,223
1951	156	89	198	684	1,127
1952	110	101	191	547	949
1953	95	77	152	520	844
1954	48	41	119	478	686
1955	41	30	114	459	644
1956	36	31	82	441	590
1957	27	26	77	427	557
1958	17	15	65	340	437
1959	20	19	29	304	372
1960	18	10	38	323	389
1961	23	4	21	292	340
1962	11	8	12	287	318
1963	16	5	16	325	362

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TABLE C.4

Death rates per 1,000 live births, of infants under 1 year certified as due to congenital syphilis

Year	Rate	Year	Rate	Year	Rate	Year	Rate
1912	1·34	1925	0·82	1938	0·18	1951	0·03
1913	1·46	1926	0·84	1939	0·17	1952	0·03
1914	1·55	1927	0·77	1940	0·16	1953	0·01
1915	1·44	1928	0·71	1941	0·21	1954	0·003
1916	1·57	1929	0·64	1942	0·19	1955	. .
1917	2·03	1930	0·55	1943	0·23	1956	. .
1918	1·90	1931	0·45	1944	0·16	1957	. .
1919	1·76	1932	0·42	1945	0·15	1958	0·004
1920	1·51	1933	0·35	1946	0·15	1959	0·003
1921	1·43	1934	0·30	1947	0·09	1960	. .
1922	1·12	1935	0·26	1948	0·09	1961	. .
1923	1·05	1936	0·24	1949	0·08	1962	0·001
1924	0·91	1937	0·19	1950	0·04	1963	. .

Rates for the years 1931–49 are according to the 1940 classification (5th Revision). For 1912–30 the rates need to be multiplied by the conversion ratio 0·857 for approximate comparability.

For 1950-63 No. 020.2 in International List (7th Revision).

TABLE C.5

Deaths from general paralysis of the insane, tabes dorsalis, and aneurysm of the aorta

	G.P.I.		Tabes dorsalis		Aneurysm of aorta	
	Males	Females	Males	Females	Males	Females
1911–20.. ..	1,697	383	592	106	838	208
1921–30.. ..	1,204	277	631	127	860	249
1931–35.. ..	819	240	566	125	969	393
1936–39.. ..	625	227	471	106	1,017	531
1940–44.. ..	482	167	270	71	367	124
1945–49.. ..	258	101	157	41	381	130
1950–54.. ..	98	42	93	27	336	166
1955	84	36	53	24	332	173
1956	56	28	66	15	329	171
1957	48	20	53	22	358	183
1958	57	28	41	16	306	219
1959	62	27	50	22	295	190
1960	56	22	44	17	312	186
1961	37	17	41	19	286	194
1962	28	16	23	6	303	198
1963	39	10	29	16	277	209

The average for the years 1911 to 1939 are based on the 4th Revision of the International List. Figures for the years 1940 to 1963 are according to the 7th Revision.

Non civilian deaths are excluded from 3rd September, 1939, for males and from 1st June, 1941 for females to 31st December, 1949.

For years 1911–1939—"Aneurysm" (code 96) of the 4th Revision List based on arbitrary rules of assignment.

For years 1940 and after: "Aneurysm of aorta" (code 022) of the 7th Revision List based on assignment by the certifying medical practitioner.

APPENDIX D

TABLES RELATING TO WALES

TABLE D.1

Population of Wales 1801, 1851, 1951 and 1959–63

Year	Population		
	Males	Females	Persons
1801	279,407	307,838	587,245
1851	581,789	581,266	1,163,055
1951	1,262,000	1,327,000	2,589,000
1959	1,282,000	1,337,000	2,623,000
1960	1,291,000	1,338,000	2,629,000
1961	1,296,000	1,334,000	2,630,000
1962	1,310,000	1,341,000	2,651,000
1963	1,310,000	1,352,000	2,662,000

1801 and 1851: Census population.

1951–1963: Estimated mid-year home population (i.e., including armed forces stationed in Wales).

TABLE D.2

Wales: Birth and stillbirth deaths and deaths of infants, 1936–63

Year	BIRTHS			DEATHS		Infant mortality rate per 1,000 live births	Neonatal mortality rate per 1,000 live births
	LIVE BIRTHS		Stillbirth rate per 1,000 total births (live and still)	Number annually	Rate per 1,000 living		
	Number annually	Rate per 1,000 living					
1936–1940 ..	37,886	15·2	50·4	33,363	13·4	61·6	33·8
1941–1945 ..	42,906	17·2	37·1	32,309	13·0	56·2	29·4
1946–1950 ..	46,603	18·4	28·8	32,067	12·6	42·3	23·7
1951–1955 ..	40,664	15·7	27·1	33,032	12·7	32·7	20·9
1956	40,915	15·7	26·8	32,438	12·4	28·8	20·6
1957	41,645	15·9	25·8	32,696	12·5	28·4	20·0
1958	42,460	16·2	26·3	32,642	12·5	26·5	18·9
1959	42,262	16·1	26·3	32,134	12·3	26·3	19·6
1960	44,147	16·8	23·6	32,715	12·4	25·3	18·7
1961	44,923	17·1	22·4	33,705	12·8	24·0	17·5
1962	45,382	17·1	22·0	33,781	12·7	25·3	16·9
1963	47,006	17·7	19·9	34,763	13·1	24·6	16·8

NOTE: Births prior to 1939 are numbers registered and for 1939 and later are occurrences in the period.
Birth rates for 1940–49 are based on civilian population.
Deaths include those of non-civilians registered in Wales.
Death rates are for civilians only from 1939 (for males) or 1941 (for females) until the end of 1949. For all other years they are based on home population.
Infant mortality and neonatal mortality is based on related births prior to 1957.

TABLE D.3

Wales: deaths from principal causes, 1960–1963

Causes of death (classified by 1955 Revision of International List)	Number of deaths*			
	1960	1961	1962	1963
Tuberculosis, respiratory	291	265	228	225
Tuberculosis, other	25	25	24	21
Syphilitic disease	40	42	34	38
Diphtheria	..	1	1	..
Whooping cough	1	2	..	1
Meningococcal infections	3	3	13	8
Acute poliomyelitis	2	4	2	..
Measles	1	9	..	8
Other infective etc. diseases	68	59	79	50
Malignant neoplasms:—				
Stomach	1,060	1,049	1,088	1,067
Lung, bronchus	1,038	1,098	1,085	1,130
Breast	521	440	529	506
Uterus	253	236	249	263
Other malignant and lymphatic neoplasms	2,608	2,762	2,734	2,742
Leukaemia, aleukaemia	141	145	149	149
Diabetes	263	250	247	229
Vascular lesions of nervous system	5,046	4,765	5,071	5,233
Coronary disease, angina	5,741	5,983	6,386	6,886
Hypertension with heart disease	797	820	758	782
Other heart diseases	4,416	4,364	4,136	4,187
Other circulatory disease	1,613	1,702	1,545	1,553
Influenza	78	551	173	104
Pneumonia	1,018	1,265	1,319	1,504
Bronchitis	1,646	1,895	2,025	2,101
Other disease of respiratory system	540	607	577	589
Ulcer of stomach and duodenum	228	182	224	230
Gastritis, enteritis and diarrhoea	132	161	157	175
Nephritis and nephrosis	320	275	280	230
Hyperplasia of prostate	283	280	238	196
Pregnancy, childbirth, abortion	25	16	19	16
Congenital malformations	323	336	317	323
Other defined and ill defined diseases	2,822	2,746	2,759	2,904
Motor vehicle accidents	366	328	314	261
All other accidents	745	778	745	767
Suicide	242	241	261	271
Homicide, operations of war	19	20	15	14
ALL CAUSES	32,715	33,705	33,781	34,763

* Deaths include those of non-civilians

TABLE D.4

Wales: deaths and death rates from cancer (including leukaemia and aleukaemia) 1963

Site	Number of deaths			Rates per million		
	Males	Females	Persons	Males	Females	Persons
Stomach	592	475	1,067	452	351	401
Lung, bronchus	1,011	119	1,130	772	88	424
Breast	7	499	506	5	369	190
Uterus	..	263	263	..	195	99
Other malignant and lymphatic neoplasms	1,476	1,266	2,742	1,127	936	1,030
Leukaemia and aleukaemia	79	70	149	60	52	56
TOTAL	3,165	2,692	5,857	2,416	1,991	2,200

TABLE D.5

Tuberculosis

Notifications per 100,000 of the population

	Respiratory		Non-respiratory	
	Average 1958–62	1963	Average 1958–62	1963
WALES	55·61	35·39	8·05	5·41
Welsh County Councils				
Anglesey	69	39	17	12
Breconshire	52	28	5	7
Caernarvonshire	74	50	13	8
Cardiganshire	51	43	11	9
Carmarthenshire	55	34	11	14
Denbighshire	70	40	11	4
Flintshire	56	39	11	7
Glamorgan	54	37	7	4
Merioneth	90	42	11	8
Monmouthshire	43	26	5	4
Montgomeryshire	33	21	14	7
Pembrokeshire	32	36	3	2
Radnorshire	28	5	4	5
Welsh County Borough Councils				
Cardiff	72	36	8	5
Merthyr	72	58	9	3
Newport	46	37	5	5
Swansea	46	24	6	4

APPENDIX E

Miners' Rehabilitation Service

COMMENTS ON STATISTICS FOR 1963

by

E. A. NICOLL, C.B.E., M.A., M.D., F.R.C.S.

The mining population in areas served by the Centres in England and Wales has diminished by 20,000 in the past year and by 149,000 since these Centres were taken over by the Ministry of Health in 1950. This does, of course, reduce the number of serious mining injuries of the kind for which the Centres were provided, and this is reflected in the slight increase in the admission of non-miners from 5 per cent to 11 per cent in the last six years.

The total number of admissions diminished slightly to 2,691, but the overall occupancy figure of 95 per cent is satisfactory. Oakmere Hall (69 per cent last year) improved to 89·2 per cent and no Centre was below 80 per cent. The proportion of cases with fractures or dislocations is 39 per cent, the order of frequency being legs, spine, pelvis and arms.

The average period of *total* incapacity is slightly increased at 7·4 months. This is the most reliable way to measure the seriousness of injuries. Clinical classification can be extremely misleading. The average duration of treatment in the Centres is 10·5 weeks, a slight increase over 1962.

From the social point of view, the most important statistics are the resettlement figures. These show the same excellent results as in previous years, and it is a great tribute to the industry that in spite of the difficulties of reinstatement due to a diminishing labour force, there has been no diminution in the absorption and resettlement of partially disabled men, except where redundancy problems are most acute. These difficulties are most apparent in Durham (10 out of 273) but in spite of this, all but 0·6 per cent are resettled within six months of discharge.

These resettlement figures maintain the extremely high standard of former years. 75·6 per cent resumed pre-accident work in the mines and 17·9 per cent went to permanent lighter work, making 93·5 per cent restored to the industry. This figure has never been below 90 per cent, and at its highest was 96 per cent. Resettlement outside the industry was 3·3 per cent compared with 3·4 per cent last year and 5 per cent in 1961. Patients retiring on completion of treatment and patients transferred back to hospital account for another 2·6 per cent, leaving only 0·6 per cent of cases who can be regarded as failures of resettlement.

Since the inception of the Miners' Rehabilitation Service in 1942, 40,666 injured miners have been treated in England and Wales, with successful resettlement in 99·9 per cent, and 93·6 per cent returned to the industry.

Miners' rehabilitation service: statistics for 1963

Centre	Capacity of centre			No. of admissions			Percentage utilisation of capacity			Percentage of cases with fractures and dislocations			Duration of treatment of patients discharged during the year					
													Average period in the centre (*in weeks*)			Average period of total incapacity (*in months*)		
	IPs	OPs	Total	Miners	Others	Total	Miners	Others	Total	Miners	Others	Total	Miners	Others	Total	Miners	Others	Total
Berry Hill Hall	56	14	70	323	14	337	94·5	3·1	97·6	46·2	73·3	47·4	10·4	8·4	10·3	5·4	6·2	5·5
Firbeck Hall	95	..	95	311	37	348	83·3	8·4	91·7	45·1	77·8	44·5	13·7	11·8	13·6	11·7	12·4	11·8
Hartford Hall..	50	15	65	294	102	396	73·7	23·1	96·8	37·5	52·8	41·6	8·6	7·5	8·3	7·1	6·8	7·0
Higham Grange	54	..	54	139	92	231	45·4	34·7	80·1	29·1	41·1	33·8	8·1	9·9	8·8	5·6	7·0	6·1
Oakmere Hall..	55	..	55	124	15	139	85·4	3·8	89·2	37·4	66·7	40·4	18·6	17·2	18·5	9·3	12·7	9·7
Talygarn	106	..	106	844	..	844	102·5	..	102·5	43·6	..	43·6	6·7	..	6·7	5·8	..	5·8
The Hermitage	60	..	60	352	44	396	83·7	15·5	99·2	42·4	47·6	42·9	7·2	10·6	7·6	6·6	9·3	6·9
TOTALS..	476	29	505	2,387	304	2,691	83·5	11·4	94·9	38·1	45·8	39·1	10·5	10·9	10·5	7·4	9·1	7·5

Resettlement classification on follow-up of patients 6 months after discharge

1—Patients discharged during the 12 months ended 29th June, 1963

2—Patients discharged from opening of centres up to 29th June, 1963

Centre	Type of case	Normal or equivalent work		Permanent light work		Work in other industry		TOTAL RESETTLED		Retired or receiving other treatment		Not resettled		TOTAL DISCHARGED AS FIT FOR WORK	
		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Berry Hill Hall ..	Miners ..	191	3,583	95	1,997	2	215	288	5,795	7	94	..	..	295	5,889
	Others ..	10	263	1	43	..	4	11	310	..	1	..	..	11	311
	Totals	201	3,846	96	2,040	2	219	299	6,105	7	95	..	..	306	6,200
Firbeck Hall ..	Miners ..	182	3,902	72	1,784	1	183	255	5,869	3	79	..	1	258	5,949
	Others ..	19	83	..	25	1	3	20	111	..	1	..	..	20	112
	Others ..	201	3,985	72	1,809	2	186	275	5,980	3	80	..	1	278	6,061
Hartford Hall ..	Miners ..	201	3,563	49	1,414	3	125	253	5,129	4	65	2	2	259	5,196
	Others ..	71	248	9	38	..	7	80	293	..	7	1	4	81	304
	Totals ..	272	3,811	58	1,479	3	132	333	5,422	4	72	3	6	340	5,500
Higham Grange..	Miners ..	92	2,332	23	1,068	6	218	121	3,618	1	83	..	..	122	3,701
	Others ..	78	670	5	73	6	31	89	774	..	16	..	..	89	790
	Totals ..	170	3,002	28	1,114	12	249	210	4,392	1	99	..	..	211	4,491
Oakmere Hall ..	Miners ..	75	1,933	18	1,138	..	144	93	3,215	1	106	..	30	95	3,351
	Others ..	11	63	2	23	..	1	13	87	..	3	..	2	13	92
	Totals	86	1,996	20	1,161	..	145	106	3,302	1	109	..	32	108	3,443
Talygarn ..	Miners ..	664	8,605	49	1,857	40	543	753	11,005	26	311	..	3	779	11,319
	Others ..	16	16	4	4	1	1	21	21	..	..	..	..	21	21
	Totals ..	680	8,621	53	1,861	41	544	774	11,026	26	311	..	800	800	11,340
The Hermitage	Miners ..	168	3,065	67	1,822	16	223	251	5,110	12	138	10	13	273	5,261
	Others ..	25	48	3	7	9	9	37	64	..	..	..	..	37	64
	Totals ..	193	3,113	70	1,829	25	232	288	5,174	12	138	10	13	310	5,325
TOTALS ..	Miners No	1,573	26,983	373	11,107	68	1,651	2,013	39,741	55	876	12	49	2,081	40,666
	%	75·6	66·3	17·9	27·3	3·3	4·1	96·8	97·7	2·6	2·2	0·6	0·1		
	Others No	230	1,391	24	213	17	56	271	1,660	..	28	1	6	272	1,694
	%	84·5	82·1	8·8	12·6	6·3	3·3	99·6	98·0	..	1·6	0·4	0·4		
	Totals No	1,803	28,374	397	11,320	85	1,707	2,285	41,401	55	904	13	55	2,353	42,360
	%	76·6	67·0	16·9	26·7	3·6	4·0	97·1	97·7	2·3	2·2	0·6	0·1		

APPENDIX F

The Blind and the Partially Sighted

England and Wales, 1962

(See Monthly Bulletin of the Ministry of Health and Public Health Laboratory Service, 1964. **23**, *78)*

TABLE F.1

Age distribution of registered blind population and of the newly registered

Age group (years)	0–1	1–4	5–15	16–20	21–29	30–39	40–49	50–59	60–64	65–69	70–79	80–84	85–89	90 and over	Not known	Total
Blind population at 31st December, 1962																
Males	6	168	1,091	511	1,108	2,085	3,499	5,166	3,251	3,981	9,257	4,790	3,045	1,159	6	39,123
Females	1	122	865	344	796	1,419	2,644	4,784	3,734	5,310	16,240	9,994	7,449	3,872	32	57,606
Persons	7	290	1,956	855	1,904	3,504	6,143	9,950	6,985	9,291	25,497	14,784	10,494	5,031	38	96,729
Registered during the year ended 31st December, 1962																
Males	12	50	52	32	52	107	156	301	265	435	1,450	821	464	123	1	4,321
Females	10	49	47	20	29	63	147	350	370	600	2,457	1,583	1,071	386	10	7,192
Persons	22	99	99	52	81	170	303	651	635	1,035	3,907	2,404	1,535	509	11	11,513

TABLE F.2

Causes of blindness in the newly registered aged less than 65 years Classification by site and aetiology

	Number	Percentage
Diagnosis by site of affection:		
Eyeball in general	273	15·4
Conjunctiva	6	0·3
Cornea	71	4·0
Lens	214	12·1
Uveal tract	334	18·8
Retina	590	33·2
Optic nerve, optic pathway, and cortical visual centres	260	14·6
Vitreous	8	0·5
Ill-defined	19	1·1
	1,775	100·0

	Number	Percentage
Diagnosis by aetiology:		
Infectious diseases (excluding transmitted maternal infection)	22	1·2
Trauma	29	1·6
Poisonings*	14	0·8
Tumours	76	4·3
Systemic diseases not elsewhere classified	390	22·0
Pre-natal influences	434	24·5
Aetiology undetermined	810	45·6
	1,775	100·0

* Including cases of retrolental fibroplasia, on the assumption that the administration of oxygen is the cause of this affection.

TABLE F.3

Causes of blindness by clinical entity

		Number		Percentage
Congenital defects:				
Lens:				
Cataract	93			
Dislocation	5			
	—	98		
Uveal tract:				
Coloboma	3			
Aniridia	5			
	—	8		
Globe:				
Microphthalmos	14			
Buphthalmos	10			
Anophthalmos	2			
Albinism	4			
Nystagmus	12			
Multiple structural defects	15			
Other structural defects	20			
	—	77		
Optic nerve:				
Optic atrophy		51		
Retina:				
Retinoblastoma	11			
Retrolental fibroplasia	10			
Retinal aplasia and allied conditions	6			
	—	27		
		—	261	14·7
Myopic chorioretinal atrophy			237	13·4
Diabetic retinopathy			235	13·2
Optic atrophy (excluding optic atrophy due to pre-natal influences)			208	11·7
Retinitis pigmentosa and allied abiotrophies (including macular dystrophy)			148	8·3
Glaucoma			128	7·2
Cataract of undetermined origin			113	6·4
Iritis and iridocyclitis of undetermined origin			69	3·9
Retinal detachment			60	3·4
Macular "degeneration"			45	2·5
Vascular retinopathy			44	2·5
Congenital syphilitic keratitis and choroiditis			33	1·9
All other causes			194	10·9
			1,775	100·0

TABLE F.4

Optic atrophy: by aetiology

	Number recorded	
Tumours:		
	57	
Intracranial	57	
Metastatic	1	
Site undetermined	4	
	—	62
Pre-natal influences:		
Genetic established or presumed	9	
"Congenital" (isolated lesion)	19	
"Congenital" (part of a syndrome)	21	
Congenital syphilis	..	
Prematurity	2	
	—	51
Neurological disorders:		
Multiple sclerosis	35	
Other affections	5	
	—	40
All trauma		10
Vascular		9
Infections:		
Meningococcal meningitis	3	
Syphilis, acquired	2	
Other infections	4	
	—	9
Diabetes		6
Anaemia		4
Cerebro-vascular lesion		3
Therapeutic agents		2
*Other specified affections		3
Undetermined		60
		259

* Each responsible for a single case

TABLE F.5

Major causes of blindness at some age groups

	Number recorded
Children under 15 years of age:	
Congenital cataract	31
Retinal aplasia and allied affections	7
Other congenital structural anomalies	31
Optic atrophy due to pre-natal influences	37
Optic atrophy, presumed or known as acquired	15
Retinitis pigmentosa and allied conditions including macular dystrophy	6
Retrolental fibroplasia	10
Retinoblastoma	11
Iritis and iridocyclitis of undetermined origin	1
Myopic chorioretinal atrophy	4
Detachment, presumably non-myopic	2
All other causes	22
	177

	Number recorded			
	15–29 years		30–49 years	
The young and middle-aged				
Optic atrophy, presumed or known as acquired		35		90
Retinitis pigmentosa and allied conditions including macular dystrophy		15		63
Congenital cataract		18		23
Other congenital structural anomalies		16		12
Optic atrophy due to pre-natal influences		6		7
Diabetic retinopathy		5		43
Myopia:				
Chorioretinal atrophy	7		47	
Detachment	3		4	
	—	10	—	51
Iritis and iridocyclitis		6		15
Glaucoma		2		14
Detachment, presumably non-myopic		3		9
Vascular retinopathy		..		4
Interstitial keratitis		1		4
Ophthalmia neonatorum		..		1
All other causes		18		74
		135		410

TABLE F.6

Age distribution of registered partially sighted population and of the newly registered

	0–1	2–4	5–15	16–20	21–49	50–64	65 and over	Total
Partially sighted population at 31st December, 1962:								
Males	5	50	1,340	669	1,998	1,473	4,355	9,890
Females	5	34	841	513	1,527	2,024	11,263	16,207
Persons	10	84	2,181	1,182	3,525	3,497	15,618	26,097
Registered during the year ended 31st December, 1962:								
Males	7	33	143	27	195	268	1,122	1,795
Females	6	23	79	25	132	388	2,573	3,226
Persons	13	56	222	52	327	656	3,695	5,021

TABLE F. 7

Causes of partial sight, 1962
Classification by site and aetiology

	Number	Percentage
Diagnosis by site of affection:		
Eyeball in general	215	19·9
Conjunctiva	2	0·2
Cornea	47	4·3
Lens	182	16·8
Uveal tract	232	21·5
Retina	266	24·6
Optic nerve, optic pathway, and cortical visual centres	101	9·3
Vitreous	6	0·6
Ill-defined	30	2·8
	1,081	100·0
Diagnosis by aetiology:		
Infectious diseases (excluding transmitted maternal infection)	6	0·6
Trauma	9	0·8
Poisonings*	6	0·6
Tumours	15	1·3
Systemic diseases not elsewhere classified	187	17·3
Pre-natal influences	361	33·4
Aetiology undetermined	497	46·0
	1,081	100·0

* Including cases of retrolental fibroplasia, on the assumption that the administration of oxygen is the cause of this affection.

TABLE F.8

Causes of partial sight by clinical entity

		Number		Percentage
Congenital defects:				
Lens:				
Cataract	89			
Dislocation	8			
	—	97		
Uveal tract:				
Coloboma	5			
Aniridia	2			
	—	7		
Globe:				
Microphthalmos	6			
Buphthalmos	6			
Albinism	15			
Nystagmus	63			
Multiple structural defects	14			
Other structural defects	20			
	—	124		
Optic nerve:				
Optic atrophy		27		
Retina:				
Retrolental fibroplasia	6			
Retinal aplasia and allied conditions	4			
Retinoblastoma	2			
	—	12		
		—	267	24·7
Myopic chorioretinal atrophy			201	18·6
Diabetic retinopathy			94	8·7
Retinitis pigmentosa and allied abiotrophies (including macular dystrophy)			81	7·5
Cataract of undetermined origin			80	7·4
Optic atrophy (excluding optic atrophy due to pre-natal influences)			74	6·8
Glaucoma			61	5·7
Vascular retinopathy			26	2·4
Macular "degeneration"			26	2·4
Iritis and iridocyclitis of undetermined origin			23	2·1
Cerebro-vascular lesions			14	1·3
Retinal detachment			12	1·1
Congenital syphilitic keratitis and choroiditis			11	1·0
All other causes			111	10·3
			1,081	100·0

TABLE F.9

Major causes of partial sight at some age groups

	Number recorded
Children under 15 years of age:	
Congenital cataract	150
Retinal aplasia and allied affections	5
Other congenital structural anomalies including nystagmus	96
Optic atrophy due to pre-natal influences	14
Optic atrophy, presumed or known as acquired	9
Retinitis pigmentosa and allied conditions including macular dystrophy	12
Retrolental fibroplasia	6
Retinoblastoma	2
Iritis and iridocyclitis of undetermined origin	1
Myopic chorioretinal atrophy	19
All other causes	10
	224

	Number recorded 15–29 years		.. 39–49 years	
The young and middle-aged:				
Optic atrophy, presumed or known as acquired		24		27
Retinitis pigmentosa and allied conditions including macular dystrophy		14		35
Congenital cataract		6		15
Other congenital structural anomalies including nystagmus		18		7
Optic atrophy due to pre-natal influences		9		3
Diabetic retinopathy		2		23
Myopia:				
Chorioretinal atrophy	8		43	
Detachment	1		1	
	—	9	—	44
Iritis and iridocyclitis		..		9
Glaucoma		..		8
Detachment, presumably non-myopic		1		1
Vascular retinopathy		..		2
Interstitial keratitis		..		5
Ophthalmia neonatorum		..		..
All other causes		14		46
		97		225

APPENDIX G

"U.K. Membership of W.H.O. Expert Advisory Panels at December, 1963."

ADDICTION-PRODUCING DRUGS

Prof. A. D. Macdonald (1). Mr. L. D. Macleod. Mr. J. R. Nicholls.

AIR POLLUTION

Dr. J. L. Burn. Dr. S. R. Craxford. Dr. P. J. Lawther(2). Dr. A. E. Martin.

ANTIBIOTICS:

Prof. E. B. Chain (*working in Italy*). Prof. L. P. Garrod.

BIOLOGICAL STANDARDISATION:

Dr. B. R. Bangham(3). Dr. D. G. Evans. Prof. J. H. Gaddum. Dr. J. H. Humphrey. Dr. D. A. Long. Prof. A. A. Miles. Dr. W. L. M. Perry. Prof. H. O. Schild.

BRUCELLOSIS:

Sir Weldon Dalrymple-Champneys.

CANCER:

Dr. G. M. Bonser. Prof. D. C. Cappell. Dr. G. M. Edington (*working in Nigeria*). Prof. A. Haddow. Prof. R. Scarff. Dr. A. C. Thackray.

CARDIOVASCULAR DISEASES:

Dr. D. G. Abrahams (*working in Australia*). Prof. J. B. Dugid (*working in Malaya*). Dr. J. N. Morris. Prof. D. D. Reid. Dr. A. G. Shaper (*working in Uganda*). Prof. C. Wilson.

CHRONIC DEGENERATIVE DISEASES:

DIABETES

Prof. W. J. Butterfield. Dr. J. D. N. Nabarro.

RHEUMATISM

Prof. E. G. L. Bywaters. Dr. W. S. C. Copeman. Dr. W. R. S. Doll(4). Dr. J. H. Kellgren. Dr. J. S. Lawrence. Prof. C. B. Perry.

DENTAL HEALTH:

Prof. R. D. Bradlaw. Prof. A. I. Darling. Dr. R. D. Emslie. Dr. Jean R. Forrest. Dr. A. M. Hornsell (*working in Australia*). Dr. G. H. Leatherman. Prof. G. L. Slack.

ENTERIC DISEASES:

Dr. E. S. Anderson. Dr. P. Collard. Dr. S. T. Cowan. Prof. R. Cruickshank. Prof. K. W. Newell (*working in the U.S.A.*).

ENVIRONMENTAL HEALTH

Dr. R. C. Hoather. Dr. W. H. H. Jebb. Mr. R. Johnson. Prof. H. D. Kay. Dr. A. Key. Dr. R. J. Macwalter. Sir George McNaughton. Dr. A. Parker. Dr. B. A. Southgate. Dr. E. Windle Taylor. Mr. J. N. Wood.

FOOD ADDITIVES:

Dr. Ella Barnes. Dr. W. T. C. Berry. Prof. E. Boyland. Sir Charles Dodds. Prof. A. C. Frazer. Dr. R. Goulding(5). Dr. H. B. Stoner.

HEALTH EDUCATION

Miss N. C. Daniels. Dr. G. G. Murphy (*working in Uganda*). Dr. R. Sutherland. Miss W. M. Warden.

HEALTH LABORATORY SERVICES:

Dr. W. d'A. Maycock. Dr. K. B. Rogers. Dr. R. E. O. Williams. Dr. G. S. Wilson.

HEALTH OF SEAFARERS:

Dr. A. Hutchison. Dr. H. E. Seiler. Dr. R. C. Wofinden.

HEALTH STATISTICS:

Prof. Sir Austin Bradford Hill. Dr. M. A. Heasman. Dr. J. Knowelden. Mr. C. A. L. Myburgh (*working in the Federation of Rhodesia and Nyasaland*). Prof. L. S. Penrose. Dr. A. H. T. Robb-Smith. Dr. A. Smith(6). Dr. C. C. Spicer. Dr. Percy Stocks.

HUMAN GENETICS:

Dr. R. K. Appleyard (*working in Belgium*). Dr. J. A. Fraser Roberts(7). Dr. A. C. Stevenson.

IMMUNOLOGY:

Dr. R. R. A. Coombs. Dr. D. A. L. Davies. Dr. J. Ungar. Dr. R. G. White. Prof. M. F. A. Woodruff.

INSECTICIDES:

Dr. J. M. Barnes. Dr. J. R. Busvine. Dr. F. P. Coyne. Dr. R. A. E. Galley. Mr. A. E. H. Higgins(8). Mr. K. S. Hocking (*working in Tanganyika*). Dr. H. G. H. Kearns. Mr. C. W. Lee(9) (*working in Tanganyika*). Dr. J. T. Martin. Dr. E. A. Parkin. Dr. C. Potter. Mr. J. A. Reid. Mr. C. B. Symes Dr. E. M. Thain. Dr. R. H. Wharton (*working in Malaysia*). Dr. V. B. Wigglesworth.

INTERNATIONAL PHARMACOPOEIA AND PHARMACEUTICAL PREPARATIONS:

Mr. F. W. Adams. Prof. A. H. Beckett. Dr. H. Davis. Mr. T. C. Denston(10). Dr. F. Hartley. Dr. T. D. Whittet.

INTERNATIONAL QUARANTINE

Mr. K. G. Bergin. Mr. W. Dalgarno. Dr. M. Mackenzie. Dr. M. T. Morgan. Dr. L. H. Murray. Dr. P. C. Murray (*working in Jamaica*). Mr. C. Parry. Sir Harold Whittingham.

LEPROSY:

Dr. P. W. Brand (*working in India*). Dr. J. A. Kinnear Brown. Dr. R. Cochrane. Dr. E. Muir. Dr. J. Ross Innes. Dr. R. Toledo (*residing in Italy*).

MALARIA:

Sir Gordon Covell. Dr. J. W. Field (*working in Malaysia*). Dr. G. Giglioli (*working in British Guiana*). Dr. H. P. S. Gillette (*working in Trinidad*). Prof. G. Macdonald(11). Dr. I. A. McGregor (*working in Gambia*). Dr. B. J. Maegraith. Prof. A. A. Sandosham (*residing in Malaysia*). Prof. H. E. Shortt. Dr. T. Wilson.

MATERNAL AND CHILD HEALTH

Prof. Sir Dugald Baird. Dr. V. Mary Crosse. Prof. R. W. B. Ellis. Dr. J. B. Lawson (*working in Nigeria*). Prof. A. Moncrieff. Prof. Wm. C. Nixon(12). Sir Harry Platt. Dr. Dorothy M. Taylor.

MEDICAL RESEARCH:

Dr. W. R. S. Doll. Sir Harold Himsworth.

MENTAL HEALTH:

Dr. J. Bowlby. Dr. G. M. Carstairs. Dr. Maxwell S. Jones. Prof. Sir Aubrey Lewis(13). Dr. the Hon. W. S. Maclay. Dr. A. C. Raman (*working in Mauritius*). Dr. J. R. Rees. Prof. T. F. Rodger. Dr. K. Soddy. Prof. E. Stengel. Dr. G. C. Tooth. Prof. W. H. Trethowan. Dr. P. M. Yap(14) (*working in Hong Kong*).

NURSING:

Miss M. Bayes. Mr. J. D. C. Geddes. Miss A. A. Graham. Miss O. F. Griffith. Miss H. Nussbaum. Miss M. B. Powell. Miss K. A. Raven. Miss E. Stephenson. Miss F. N. Udell.

NUTRITION:

Prof. E. Cruickshank (*working in Jamaica*). Dr. R. F. A. Dean (*working in Uganda*). Dr. D. B. Jelliffe. Dr. R. Passmore. Prof. B. S. Platt. Dr. H. Sinclair. Dr. G. R. Wadsworth. Dr. J. C. Waterlow (*working in Jamaica*).

OCCUPATIONAL HEALTH:

Dr. D. Hunter. Prof. R. E. Lane. Dr. T. A. Lloyd Davies(15). Dr. R. Murray. Dr. L. G. Norman. Dr. R. F. S. Schilling. Dr. D. Stewart. Rt. Hon. Lord Taylor. Dr. R. F. Tredgold.

ORGANISATION OF MEDICAL CARE

Dr. A. L. Banks(16). Dr. C. M. Fleming. Dr. J. Fry. Dr. J. Hunt. Dr. H. M. C. Macaulay.

PARASITIC DISEASES:

BILHARZIASIS

Dr. C. D. Standen.

GENERAL PARSITOLOGY

Dr. G. C. Ainsworth. Dr. F. I. C. Apted. Prof. J. J. C. Buckley. Dr. H. Fairbairn (*residing in Portugal*). Mr. P. Freeman. Prof. P. C. C. Garnham. Dr. F. Hawking-Dr. R. B. Heisch (*working in Kenya*). Dr. C. Hoare. Dr. D. J. Lewis. Sir Philip Manson. Bahr. Mr. P. F. Mattingly. Dr. A. R. MdKelvia (*working in Kenya*). The Rev. J. W. R. Sarkies. Prof. J. M. Watson. Prof. A. W. Woodruff.

TRYPANOSOMIASES

Dr. W. H. R. Lumsden. Dr. K. R. S. Morris. Dr. T. A. M. Nash. Dr. B. Weitz. Dr. K. C. Willett. Dr. J. Williamson.

PLAGUE:

Mr. S. A. Barnett. Mr. G. H. E. Hopkins.

PROFESSIONAL AND TECHNICAL EDUCATION OF MEDICAL AND AUXILIARY PERSONNEL:

Sir David Campbell. Rt. Hon. Lord Cohen of Birkenhead. Dr. J. R. Ellis. Dr. W. J. Hamilton. Sir Harold Himsworth(17). Prof. J. M. Mackintosh. Prof. G. Payling Wright. Sir George W. Pickering. Dr. Margaret Read. Prof. W. S. Walton.

PUBLIC HEALTH ADMINISTRATION

Prof. C. F. Brockington. Dr. C. O. B. Brooke. Sir John A. Charles. Sir Kenneth Cowan. Sir George E. Godber. Dr. F. F. Main. Dr. R. M. Morris (*working in the Federation of Rhodesia and Nyasaland*).

RADIATION:

The Rt. Hon. Lord Adrian. Mr. W. Binks. Dr. I. S. Eve. Dr. L. H. Gray. Mr. A. W. Kenny. Prof. L. F. Lamerton. Dr. J. F. Loutit. Prof. B. Macmahon (*working in the U.S.A.*). Dr. W. G. Marley. Prof. W. V. Mayneord. Dr. A. S. McLean. Dr. E. C. Pochin. Dr. Katharine Williams. Dr. F. J. Woodman.

REHABILITATION:

Dr. F. S. Cooksey. Dr. R. Langdale-Kelham.

TRACHOMA:

Mr. A. J. Boase (*working in Jordan*). Sir Stewart Duke-Elder. Prof. Ida Mann (*working in Australia*). Prof. A. Sorsby. Dr. V. Tabone (*working in Malta*).

TUBERCULOSIS:

Dr. P. M. d'Arcy Hart. Dr. A. L. Cochrane. Dr. I. M. MacGregor. Dr. A. S. Moodie (*working in Hong Kong*).

VENEREAL INFECTIONS AND TREPONEMATOSES:

Prof. K. R. Hill. Mr. A. J. King. Dr. G. L. M. McElligott (*residing in Ireland*). Dr. A. E. Wilkinson. Dr. R. R. Willcox.

VIRUS DISEASES:

Sir Christopher Andrewes. Prof. W. I. B. Beveridge. Dr. L. H. Collier. Prof. C. W. Dixon (*working in New Zealand*). Prof. A. W. Donwie. Dr. F. Fulton. Dr. C. E. Gordon Smith. Dr. L. Grant (*working in Jamaica*). Dr. A. J. Haddow (*working in Uganda*). Prof. J. H. Hale. Dr. L. Hoyle. Dr. A. Isaacs. Dr. Liang Hin Lee (*working in Singapore*). Dr. Kok Ann Lim (*working in Singapore*). Dr. F. O. MacCallum. Dr. F. N. MacNamara (*working in New Zealand*). Dr. A. D. Macrae. Prof. A. M.-M. Payne (*working in the U.S.A.*). Prof. Sheila Sherlock(18). Prof. Wilson Smith. Dr. M. G. P. Stoker. Prof. C. H. Stuart-Harris. Dr. G. L. Timms (*working in Kenya*).

ZOONOSES:

Dr. I. A. Galloway. Dr. H. Thornton (*working in the Federation of Rhodesia and Nyasaland*).

(1) Attended Expert Committee on Addiction Producing Drugs.
(2) Attended Expert Committee on Air Pollution.
(3) Attended Expert Committee on Biological Standardisation.
(4) Attended Expert Committee on Prevention of Cancer and Advisory Committee on Medical Research.
*(5) Attended Expert Committee on Food Additives.
(6) Attended Expert Committee on Health Statistics: Sub-Committee on Classification of Diseases.
†(7) Attended Expert Committee on Human Genetics.
(8) Attended Expert Committee on Insecticides.
(9) Attended Expert Committee on Insecticides.
(10) Attended Expert Committee on Specifications for Pharmaceutical Preparations.
(11) Attended Expert Committee on Malaria.
(12) Attended Expert Committee on Maternal and Child Health.
(13) Attended Expert Committee on Mental Health (Psychosomatic Disorders).
(14) Attended Expert Committee on Mental Health (Psychosomatic Disorders).
(15) Attended Expert Committee on Rehabilitation of Patients with Cardiovascular Diseases).
(16) Attended Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel.
(17) Attended Advisory Committee on Medical Research.
(18) Attended Expert Committee on Hepatitis.

*(5) Attended Joint Meeting of the FAO Committee on Pesticides in Agriculture and WHO Expert Committee on Pesticide Residues (Evaluation of the Toxicity of Pesticide Residues in Food).
†(7) Attended Expert Committee on Health Statistics: Sub-Committee on Classification of Diseases.

APPENDIX H

MEDICAL DEPARTMENT OF MINISTRY OF HEALTH
(July, 1964)

Chief Medical Officer:
Sir George Godber, K.C.B., D.M., F.R.C.P.

Deputy Chief Medical Officer:
D. Thomson, C.B., M.D.
Albertine L. Winner, O.B.E., M.D., F.R.C.P.

MED. 1. LOCAL AUTHORITY SERVICES

Special Principal Medical Officer: I. G. Davies, M.D., F.R.C.P.

MED. 1A. ENVIRONMENTAL HEALTH

Principal Medical Officer: J. M. Ross, M.B., Ch.B., D.P.H.

Senior Medical Officer: A. E. Martin, M.D., Ch.B., D.P.H.

Medical Officers: J. F. E. Bloss, M.R.C.S., L.R.C.P., D.T.M.H., D.P.H. H. M. Elliott, B.A., M.B., B.Chir., D.P.H.

Food Hygiene Advisory Officer: T. Morley Parry.

Public Health Advisory Officer: H. A. Perry.

MED. 1B. EPIDEMIOLOGY

Principal Medical Officer: A. T. Roden, M.D.

Senior Medical Officers: D. H. D. Burbridge, O.B.E., D.P.H., M.R.C.S. A. J. Eley, M.A., M.B., B.S., D.M.R.D.

Medical Officers: W. N. Dunnet, M.D. J. R. H. Berrie, M.B., Ch.B., D.P.H., D.I.H., F.R.F.P.S.

MED. 1C (i). MATERNAL AND CHILD HEALTH

Principal Medical Officer: Roma N. Chamberlain, M.B., Ch.B.

Senior Medical Officer: Eileen M. Ring, M.D., D.P.H.

Medical Officers: Mary Gorrie, M.D., D.P.H. Marjorie Kuck, M.B., M.R.C.O.G. Anne Guy, B.Sc., M.B., Ch.B., D.P.H.

MED. 1C (ii)

Senior Medical Officer: C. A. Boucher, O.B.E., D.M.

Medical Officer: C. G. M. Nicol, M.B.

MED. 2. SPECIAL SUBJECT STUDIES

MED. 2A. PHARMACOLOGY, TOXICOLOGY AND NUTRITION

Pharmacology (incl. Therapeutic Substances Act, 1956) (a), Toxicology (b), Nutrition (c), Editing arrangements (incl. Prescribers' Journal) (d).

Principal Medical Officer: E. T. Conybeare, O.B.E., M.D., F.R.C.P.

Senior Medical Officers: J. A. Holgate, M.B. (*a*). R. Goulding, M.D., B.Sc. (*b*). W. T. C. Berry, M.D. (*c*). J. L. Hunt, M.B., Ch.B. (*d*).

Medical Officers: P. S. Elias, M.B., B.S., B.Sc. (*b*). Phyllis W. Fleming, M.D. (*c*).

MED. 2 (B). INTERNIONAL HEALTH, PORT HEALTH, CIVIL DEFENCE

Principal Medical Officer: L. H. Murray, O.B.E., M.D.

Senior Medical Officer: C. Seeley, M.D.

Medical Officer: A. McGregor, M.B.

MED. 3. GENERAL PRACTITIONER AND REGIONAL MEDICAL SERVICES

Special Principal Medical Officer: C. E. Gallagher, O.B.E., M.R.C.S., L.R.C.P.

Principal Medical Officer: K. A. Boughton Thomas, M.B., Ch.B.

Senior Medical Officers: *T. E. A. Carr, B.Sc., M.B., Ch.B., D.Obst.R.C.O.G. J. E. Struthers, M.B., Ch.B. *G. W. Whittall, M.B., B.Ch., M.R.C.S., L.R.C.P.

Adviser: Dr. A. Talbot Rogers, C.B.E.

EAST MIDLANDS DIVISION

(Divisional Office: Government Buildings, Block 2, Chalfont Drive, Western Boulevard, Nottingham)

Senior Medical Officer: E. D. Robb, M.B., Ch.B.

Medical Officers: W. D. Anderson, M.B., Ch.B. G. I. G. Findlay, M.B., Ch.B. H. J. Lee, M.B., Ch.B. J. R. McBoyle, T.D., M.B., Ch.B. C. R. Morgan, M.R.C.S., L.R.C.P., L.M.S.S.A. D. B. Robb, M.B., Ch.B. L. C. Rutter, M.B., Ch.B., D.Obst.R.C.O.G.

EASTERN DIVISION

(Divisional Office: Queen Anne's Chambers, 28 Broadway, Westminster, S.W.1)

Senior Medical Officer: I. E. Phelps, M.R.C.S., L.R.C.P., D.C.H.

Medical Officers: J. C. H. Bird, M.B., Ch.B., D.Obst.R.C.O.G. J. C. B. Bone, M.B., B.S., M.R.C.S., L.R.C.P. A. Brebner, M.B., Ch.B., D.P.H. C. R. Morison, M.D., Ch.B. S. Ruttle, M.D., B.Ch., B.A.O., M.R.C.P., D.C.H. B. C. Welshman, M.A., M.B., B.Chir. J. A. Whyte, M.B., Ch.B.

NORTH EASTERN DIVISION

(Divisional Office: 44–68 The Headrow, Leeds, 1)

Senior Medical Officer: R. W. Bone, M.B., Ch.B.

Medical Officers: J. Adam, O.B.E., M.B., Ch.B. J. Barr, M.B., Ch.B. C. M. Boucher, M.D., B.Ch., B.A.O. D. W. E. Burridge, T.D., M.B., Ch.B. E. J. S. Evans, M.A., M.B., B.Chir., M.R.C.S., L.R.C.P. H. J. Gibson, B.L., M.D., Ch.B., D.P.H. A. G. Jackson, M.B., Ch.B. C. E. B. Lynch, M.D., Ch.B. D. McGregor, M.A., M.R.C.S., L.R.C.P. J. D. G. Turner, M.A., M.B., B.Chir., M.R.C.S., L.R.C.P.

NORTH WESTERN DIVISION

(Divisional Office: 53 Whitworth Street, Manchester, 1)

Senior Medical Officer: W. Meikle, M.B., B.S.

Medical Officers: A. T. Ashcroft, M.B., Ch.B. S. Campbell, M.B., Ch.B. G. Cornah, M.B., Ch.B. G. Evans, M.B., B.S., M.R.C.S., L.R.C.P. T. S. Hanlin, M.B., Ch.B., D.P.H., P. N. Holmes, M.B., Ch.B., M.R.C.S., L.R.C.P. J. A. Judson, M.B., Ch.B., M.R.C.S., L.R.C.P. C. J. Livingstone, M.B., Ch.B. J. MacKellar, M.A., M.B., B.Chir., M.R.C.S., L.R.C.P. A. B. Stewart, M.B., B.S., L.R.C.P., L.R.C.S., L.R.F.P.S.

SOUTHERN DIVISION

(Divisional Office: Queen Anne's Chambers, 28 Broadway, Westminster, S.W.1.)

Senior Medical Officer: E. Mence B.Sc., M.B., Ch.B.

Medical Officers: J. M. Canning, M.B., Ch.B., B.A.O. H. B. Cowan, M.A., M.B., Ch.B. P. B. Hanbury, M.R.C.S., L.R.C.P., E. G. L. Mark, B.Sc., M.D., Ch.B., M.R.C.P. A. W. M. Rooke, M.B., B.S. G. R. M. Sichel, M.B., B.S., M.R.C.S., L.R.C.P.

WESTERN DIVISION

(Divisional Office: Five Ways House (West Entrance), Islington Row, Birmingham, 15)

Senior Medical Officer: A. W. Lilley, M.R.C.S., L.R.C.P.

Medical Officers: G. Bridge, M.D., Ch.B., M.M.S.A., D.Obst.R.C.O.G. A. W. Callaghan, M.A., M.B., B.Ch., B.A.O. A. R. Dawson, M.B., Ch.B. R. C. Hill, M.B., B.S., D.C.P., M.R.C.S., L.R.C.P. M. Hutchinson, M.B., Ch.B., D.Obst.R.C.O.G. A. T. L. Kingdon, M.D., B.S., M.R.C.P., A. F. MacBean, B.Sc., M.B., Ch.B. M. A. Nicholson, M.B., Ch.B. H. A. Tuck, M.B., B.S.

MED. 4. HOSPITAL SERVICE

MED. 4A. GENERAL QUESTIONS AND STUDIES

Principal Medical Officer: H. Yellowlees, M.A., B.M., B.Ch.

Senior Medical Officers: R. H. Barrett, M.R.C.S., L.R.C.P., D.T.M.H., D.P.H. Catherine N. Dennis, F.R.C.S., D.P.H. A. J. Eley, M.A., M.B., B.S., D.M.R.D. T. J. B. Geffen, M.D., M.R.C.P. W. Lees, M.B., Ch.B., M.R.C.O.G. J. L. McLetchie, C.M.G., O.B.E., M.B., Ch.B., D.P.H. E. C. Murphy, T.D., M.R.C.S., L.R.C.P. J. G. Thomson, M.B., Ch.B., D.P.H. J. N. Twohig, M.B., B.Ch., B.A.O., D.P.H. J. M. G. Wilson, M.B., M.R.C.P.

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MED. 4B. REGIONAL LIAISON (NORTH)

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Senior Medical Officers: W. Lees, M.B., Ch.B., M.R.C.O.G. E. C. Murphy, T.D., M.R.C.S. J. N. Twohig, M.B., B.Ch., B.A.O., D.P.H.

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MED. 4C. REGIONAL LIAISON (SOUTH)

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Medical Officer: Elizabeth C. Shore, M.R.C.S., L.R.C.P.

MED. 4D. HOSPITAL PLANNING

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Senior Medical Officers: Catherine N. Dennis, F.R.C.S., D.P.H. T. J. Geffen, M.D., M.R.C.P. A. B. Harrington, M.D. J. N. Twohig, M.B., D.P.H.

Medical Officers: J. R. Ascott, M.B., M.R.C.S., L.R.C.P., D.O.M.S. D. Dooley, M.R.C.S.

MED. 5. MENTAL HEALTH

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Principal Medical Officer: G. C. Tooth, M.D., D.P.M.

Senior Medical Officers: J. Brothwood, M.B., M.R.C.P., D.P.M. R. Phillipson, O.B.E., L.R.C.P., D.P.M. R. Wilkins, M.R.C.S., L.R.C.P., D.P.M.

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Senior Medical Officers: M. A. Heasman, M.R.C.S. (Medical Statistics). J. M. G. Wilson, M.B., M.R.C.P. (*A*). F. Riley, M.D., M.R.C.P. (*B*).

Medical Officers: Mary Sheridan, O.B.E., M.A., M.D. (*A*). K. W. Lovel, B.M., M.R.C.P. (*B*). C. G. Nicol, M.B., B.S., M.R.C.S., L.R.C.P., D.P.H. (Inspector of Anatomy).

MED. 7. ARTIFICIAL LIMBS AND APPLIANCES

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Senior Medical Officers: P. Seelig, M.D. M. Vitali, Med.Dip. (Warsaw) i/c. Research.

Medical Officers: R. G. Redhead, M.B., B.S. (Research). R. G. Buxton, L.R.C.S., L.R.C.P. (Blackpool).

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Leeds	G. S. Thompson, M.B., F.R.C.S.(Ed.) (S.M.O.). D. S. Toole, B.A., M.B., B.Ch. T. Gray Williams, M.R.C.S., L.C.R.P.*
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Cambridge	E. A. Smyth, O.B.E., M.Ch.Orth., F.R.C.S.I.
London	G. L. Alcock, M.A., M.B., B.Ch., M.R.C.S.* J. A. K. Fitzgerald, M.B., B.Ch., D.T.M.
Roehampton	D. S. McKenzie, M.B., Ch.B. (S.M.O.). R. D. L. Davies, M.B., B.S., M.R.C.S. G. R. Parry, M.B., F.R.C.S. E. E. Harris, M.A., M.R.C.S., L.R.C.P. I. Fletcher, M.R.C.S., L.R.C.P. W. C. Lawrence, M.B., FR.C.S. (Ed.)., M.Ch.Orth. A. H. W. Babington, M.R.C.S., L.R.C.P.
Tunbridge Wells	E. D. T. Lewis, M.B., Ch.B.
Reading	D. L. Harbinson, O.B.E., M.B., B.Ch., D.P.H.
Bristol	J. H. T. Harrington, B.A., M.R.C.S., L.R.C.P. (S.M.O.).
Cardiff	See Welsh Board of Health.
Birmingham	R. G. Bryce, M.B., Ch.B., D.P.H. R. Hudson Evans, M.R.C.S., L.R.C.P. R. H. H. Robertson, M.R.C.S., L.R.C.P.
Manchester	P. F. Early, M.B., F.R.C.S. (S.M.O.). H. J. B. Day, M.R.C.S., L.R.C.P. C. C. D. Martin, M.Ch.Belf., M.B., B.Ch., B.A.O., F.R.C.S.(I).
Liverpool	J. C. Cooper Brass, M.R.C.S., L.R.C.P., F.R.C.S.(Ed.), V. Roman, M.D., F.R.C.S.(Ed.).
Sheffield	Brig. C. M. Marsden, C.B.E., M.B., B.S., F.R.C.S.(Ed.).
Exeter	J. H. Ramage, M.B., Ch.B.
Portsmouth	Brig. A. B. Dempsey, O.B.E., F.R.C.S.
Dublin	L. P. McCullagh, M.B., B.Ch.

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* Unestablished.

DENTAL HEALTH SERVICE

(attached to Headquarters)

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Deputy Chief Dental Officer: Lieut.-Colonel F. S. Whiter, O.B.E., F.D.S.

Senior Dental Officers: R. A. Campbell, E.D., B.D.Sc. H. A. Dixey, L.D.S. Major L. G. Hitching, T.D., L.D.S. Eleanor M. Knowles, O.B.E., F.D.S. A. G. Smith, L.D.S. G. A. Rowse, L.D.S.

Dental Officers: M. A. Freeman, M.C., L.D.S. Jean Oswald, L.D.S. G. B. Roberts, LL.B., L.D.S.

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PHARMACEUTICAL SERVICES

Chief Pharmacist: H. Davis, C.B.E., Ph.D., F.P.S., F.R.I.C.

Pharmacist (Senior Grade): to be appointed.

Pharmacists (Main Grade): S. F. Hall, F.P.S. Miss C. E. Mozley-Stark, F.P.S. W. J. W. Price, F.P.S.

Senior Technical Officer (Pharmacist): R. Higson, F.P.S.

Technical Officers I (Pharmacist): Miss D. M. Hine, M.P.S. S. Williams, M.P.S.

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Deputy Chief Nursing Officers: Miss E. Jackson, O.B.E. Miss D. M. White.

Hospital Nursing Officers: Miss C. Biddulph. Mrs. J. Heyward (P.T.). Miss M. le Q. Mitchell. Miss H. M. Simpson. Miss E. West. Miss J. Whitehead. Miss M. Williams.

Mental Nursing Officers: F. J. Ely. Miss O. F. Griffith.

Public Health Nursing Officers: Miss M. M. Bathgate. Miss M. H. Cook. Miss K. Drage. Miss A. E. Girling. Miss F. L. Gray. Miss F. A. Heaney. Miss R. E. Maguire. Miss M. W. Slight. Miss E. M. Trehearn. Miss W. Webster.

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Deputy Chief Welfare Officers: Miss E. L. Hope Murray. Mrs. D. Ottley.

Headquarters staff: Miss W. L. Adams, M.B.E. (Inspector of Blind Welfare). Miss C. Brooke-Hughes (Welfare Officer for the Deaf). Mr. J. Castelow (Mental health services). Mr. Sharp (Mental health services). Mrs. W. M. Curzon (Professional adviser to the Training Council for Staff of Training Centres for Subnormals, and Advisory Mental Welfare Officer). Miss M. G. M. Gordon, Mrs. I. E. M. Halsall, Miss M. E. Haskins (Advisory Mental Welfare Officers).

Regional Welfare Officers: Mr. J. K. Argles. Miss H. Brown. Miss K. Buchanan. Miss K. E. G. Davidge. Miss J. M. T. Dawson. Miss F. E. Handasyde. Miss J. M. Mason. Miss J. R. Mijouain. Miss M. E. Openshaw. Miss M. B. Wann. Miss Z. E. Williams.

Resignations and Retirements: Miss G. M. Aves, C.B.E., Chief Welfare Officer retired 31st December, 1963. Miss A. D. Kelly, resigned 31st December 1963. Miss M. J. Roxburgh, O.B.E., retired 30th June, 1964.

WELSH BOARD OF HEALTH

Special Principal Medical Officer: A. R. Culley, C.B.E., M.D., Q.H.P.

Senior Medical Officer: R. T. Bevan, M.D.

Medical Officers: A. G. Jones, M.A., M.R.C.O.G. Mary Jenkins, M.B., T. D. L. Thomas, M.B., Ch.B.

Senior Medical Officer (Regional Medical Services): T. J. M. Gregg, O.B.E., M.B.

Medical Officers (Regional Medical Services): G. M. Evans, M.R.C.S. Col. H. A. Mullen, T.D., M.B., Ch.B. A. J. R. Hudson, M.A., M.R.C.S., L.R.C.P. J. O. Williams, M.R.C.S., L.R.C.P. E. A. Wilson, M.B., Ch.B.

Medical Officers (Artificial Limbs and Appliances): G. A. Lloyd Jones, M.B. A. A. Gregory Dean, M.D.

Dental Officers: G. E. Morgan, F.D.S. G. Morris, L.D.S. T. W. Beer, L.D.S.

Welfare Officer: Miss E. Lewis.

Retirement: R. G. Roberts.

Consultant Advisers: Dr. G. S. W. Organe (Anaesthetics). Professor F. G. Young (Biochemistry). Dr. W. d'A. Maycock, M.V.O., M.B.E. (Blood Transfusion). Dr. Graham Hayward (Cardiology). Dr. E. N. Allott (Chemical Pathology). Dr. J. C. Scadding and Dr. V. H. Springett (Chest Diseases). Mr. W. P. Cleland (Chest Surgery). Mr. T. G. Ward, C.B.E. (Dental-Oral Surgery). Professor K. P. Liddelow (Dental-Prosthetics). Professor G. L. Roberts (Dental Surgery). Dr. H. Renwick Vickers, V.R.D. (Dermatology). Dr. R. R. Bomford and Professor Max Rosenheim, C.B.E. (General Medicine). Dr. R. G. Cochrane (Leprosy). Sir Gordon Covell, C.I.E. (Malaria). Lord Brain (Neurology). Mr. D. W. C. Northfield (Neuro-surgery). Mr. Arnold L. Walker, C.B.E. and Mr. A. J. Wrigley (Obstetrics, Gynaecology and Maternity Services). Sir Stewart Duke-Elder, G.C.V.O. (Ophthalmology). Mr. H. Jackson-Burrows and Mr. N. Capener (Orthopaedic Surgery). Mr. T. E. Cawthorne (Otolaryngology). Sir Wilfred H. P. Sheldon, K.C.V.O. (Paediatrics). Professor R. W. Scarff, C.B.E. (Pathology). Dr. F. S. Cooksey, O.B.E. (Physical Medicine). Professor J. E. Roberts (Physics). Professor J. D. N. Hill, Dr. A. B. Monro, Dr. D. H. H. Thomas and Dr. W. Warren (Psychiatry). Dr. P. J. Kerley, C.V.O., C.B.E. and Dr. J. Hodson (Radiology). Sir Brian Windeyer (Radiotherapy). Mr. E. A. Nicoll, C.B.E. (Rehabilitation of Injured Miners). Mr. H. C. Edwards, C.B.E. and Sir James Paterson Ross, K.C.V.O. (Surgery). Mr. Ambrose King (Venereal Diseases).

Retired or Resigned: Dr. J. D. Robertson. Dr. A. Markson. Dr. W. Wilson. Dr. J. F. Mackie. Dr. E. E. Henderson. Sir Clement Price Thomas, K.C.V.O. Professor R. B. Bradlaw, C.B.E. Dr. S. Cochrane Shanks, C.B.E. Dr. G. Roberts.

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22 JUL 1964

ON THE STATE OF THE PUBLIC HEALTH

The Annual Report of the Chief Medical Officer of
the Ministry of Health for the year 1963

CORRECTIONS

Page 6 - line 21
Delete " treatment ", *insert* " testing "

Page 39 - Table II.16 footnote†
Delete 32, *insert* 36

Page 40
Delete the paragraph under Deaths, insert There were 3 deaths, excluding those due to late effects; a man aged 41 years, a woman aged 31 years and a boy aged 5 years.

Page 90 - Table VII.5
Delete figures for G.Ps. (Section 10b) for 1955-60. No returns prior to 1961.

Facing Page 212 - Table B.8 (Examinee group (6) - Column 12
Delete 0·4, *insert* 0·9

Page 232 - Appendix G - Dental Health
Delete Dr. Jean Forrest, *insert* Miss Jean Forrest

Page 238 - Med.4C
Second line omitted - insert Senior Medical Officers: R. H. Barrett, M.R.C.S., L.R.C.P., D.T.M.H., D.P.H., Catherine N. Dennis ....

Ministry of Health,
February, 1965.

LONDON: HER MAJESTY'S STATIONERY OFFICE

The Winter of 1962-63 in Greater London

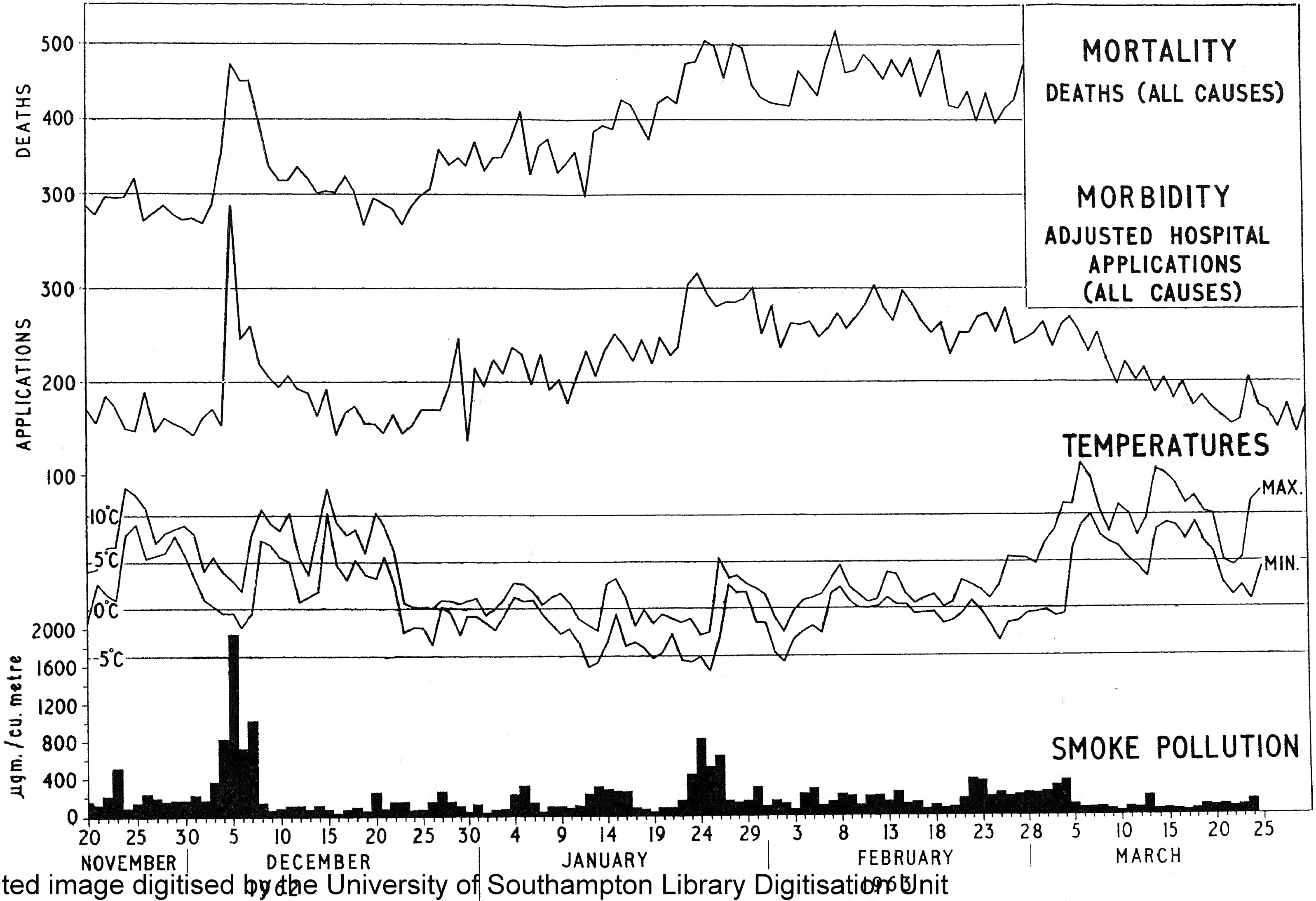

TABLE B.8

England and Wales: mass miniature radiography, 1962 *The number of record cards received has been multiplied by ten*

Examinee Group		MALES												FEMALES												Persons All ages
		Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated	All ages	Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated	All ages	
Out-patients and In-patients of hospitals (0)	Total number of examinations	30	..	360	600	1,210	1,280	1,390	770	520	750	..	6,910	60	50	420	660	1,340	1,490	1,570	780	540	850	..	7,760	14,670
	No. with tuberculosis requiring treatment or close supervision (0)	..	..	..	..	3	2	1	1	2	3	..	12	..	..	1	..	2	..	..	1	..	2	..	6	18
	Rate per 1,000 examinations	..	..	..	..	2·5	1·6	0·7	1·3	3·8	4·0	..	1·7	..	..	2·4	..	1·5	..	..	1·3	..	2·4	..	0·8	1·2
	No. with tuberculosis requiring occasional supervision only (1)	..	..	..	1	3	3	6	2	3	5	..	23	..	..	..	..	2	2	2	..	..	1	..	7	30
	Rate per 1,000 examinations	..	..	..	1·7	2·5	2·3	4·3	2·6	5·8	6·7	..	3·3	..	..	..	..	1·5	1·3	1·3	..	..	1·2	..	0·9	2·0
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	..	..	..	1·7	5·0	3·9	5·0	3·9	9·6	10·7	..	5·1	..	..	2·4	..	3·0	1·3	1·3	1·3	..	3·5	..	1·7	3·3
H.M. Forces Intakes (1)	Total number of examinations	..	..	460	130	50	10	..	..	..	..	..	650	..	..	..	..	..	..	10	..	..	..	..	10	660
	No. with tuberculosis requiring treatment or close supervision (0)	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
	Rate per 1,000 examinations	..	..	..	7·7	..	..	..	..	..	..	..	1·5	..	..	..	..	..	..	..	..	..	..	..	..	1·5
	No. with tuberculosis requiring occasional supervision only (1)	..	..	1	..	1	2	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	4
	Rate per 1,000 examinations	..	..	2·2	..	20·0	200·0	..	..	..	..	..	6·2	..	..	..	..	..	..	..	..	..	..	..	..	6·1
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	..	..	2·2	7·7	20·0	200·0	..	..	..	..	..	7·7	..	..	..	..	..	..	..	..	..	..	..	..	7·6
General Practitioners Referrals (2)	Total number of examinations	2,670	1,240	10,510	11,680	22,620	21,270	24,350	11,580	11,050	10,890	20	127,880	2,270	1,050	12,810	12,320	21,220	19,060	17,120	7,470	5,510	7,750	30	106,610	234,490
	No. with tuberculosis requiring treatment or close supervision (0)	2	..	38	83	198	179	197	107	93	96	1	994	9	2	47	60	103	87	61	24	18	19	..	430	1,424
	Rate per 1,000 examinations	0·7	..	3·6	7·1	8·8	8·4	8·1	9·2	8·4	8·8	50·0	7·8	4·0	1·9	3·7	4·9	4·9	4·6	3·6	3·2	3·3	2·5	..	4·0	6·1
	No. with tuberculosis requiring occasional supervision only (1)	4	2	14	27	79	148	224	114	98	124	1	835	8	..	22	26	66	111	107	54	45	74	..	513	1,348
	Rate per 1,000 examinations	1·5	1·6	1·3	2·3	3·5	7·0	9·2	9·8	8·9	11·4	50·0	6·5	3·5	..	1·7	2·1	3·1	5·8	6·2	7·2	8·2	9·5	..	4·8	5·7
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	2·2	1·6	4·9	9·4	12·2	15·4	17·3	19·1	17·3	20·2	100·0	14·3	7·5	1·9	5·4	7·0	8·0	10·4	9·8	10·4	11·4	12·0	..	8·8	11·8
School children (school groups) (3)	Total number of examinations	6,920	6,970	21,630	400	..	..	..	..	..	..	..	35,920	6,260	5,960	17,180	250	..	..	..	..	..	..	..	29,650	65,570
	No. with tuberculosis requiring treatment or close supervision	10	7	6	..	..	..	..	..	..	..	..	23	11	6	10	..	..	..	..	..	..	..	..	27	50
	Rate per 1,000 examinations	1·4	1·0	0·3	..	..	..	..	..	..	..	..	0·6	1·8	1·0	0·6	..	..	..	..	..	..	..	..	0·9	0·8
	No. with tuberculosis requiring occasional supervision only (1)	17	13	7	..	..	..	..	..	..	..	..	37	13	9	8	1	..	..	..	..	..	..	..	31	68
	Rate per 1,000 examinations	2·5	1·9	0·3	..	..	..	..	..	..	..	..	1·0	2·1	1·5	0·5	4·0	..	..	..	..	..	..	..	1·0	1·0
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	3·9	2·9	0·6	..	..	..	..	..	..	..	..	1·7	3·8	2·5	1·0	4·0	..	..	..	..	..	..	..	2·0	1·8
Contacts (4)	Total number of examinations	2,370	1,500	4,170	2,140	4,010	4,060	2,720	820	560	520	..	22,870	3,000	2,170	4,160	1,570	2,390	3,440	2,460	680	360	640	10	20,880	43,750
	No. with tuberculosis requiring treatment or close supervision (0)	7	1	5	10	16	12	12	5	4	4	..	76	11	2	3	5	6	5	3	..	1	..	..	36	112
	Rate per 1,000 examinations	3·0	0·7	1·2	4·7	4·0	3·0	4·4	6·1	7·1	7·7	..	3·3	3·7	0·9	0·7	3·2	2·5	1·5	1·2	..	2·8	..	..	1·7	2·6
	No. with tuberculosis requiring occasional supervision only (1)	15	7	1	2	12	21	11	2	2	5	..	78	19	5	8	2	6	13	12	4	6	3	..	78	156
	Rate per 1,000 examinations	6·3	4·7	0·2	0·9	3·0	5·2	4·0	2·4	3·6	9·6	..	3·4	6·3	2·3	1·9	1·3	2·5	3·8	4·9	5·9	16·7	4·7	..	3·7	3·6
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	9·3	5·3	1·4	5·6	7·0	8·1	8·5	8·5	10·7	17·3	..	6·7	10·0	3·2	2·6	4·5	5·0	5·2	6·1	5·9	19·4	4·7	..	5·5	6·1
Special surveys (5)	Total number of examinations	70	50	480	550	1,210	1,110	1,040	490	310	510	..	5,820	20	50	590	400	1,230	920	940	600	390	550	..	5,690	11,510
	No. with tuberculosis requiring treatment or close supervision (0)	..	..	..	1	2	1	..	1	1	2	..	8	..	..	1	..	..	1	..	..	..	1	..	3	11
	Rate per 1,000 examinations	..	..	..	1·8	1·7	0·9	..	2·0	3·2	3·9	..	1·4	..	..	1·7	..	..	1·1	..	..	..	1·8	..	0·5	1·0
	No. with tuberculosis requiring occasional supervision only (0)	..	..	..	..	..	1	3	..	2	3	..	9	..	..	..	..	..	3	..	1	1	..	..	5	14
	Rate per 1,000 examinations	..	..	..	..	..	0·9	2·9	..	6·5	5·9	..	1·5	..	..	..	..	..	3·3	..	1·7	2·6	..	..	0·9	1·2
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	..	..	..	1·8	1·7	1·8	2·9	2·0	9·7	9·8	..	2·9	..	..	1·7	..	..	4·3	..	1·7	2·6	1·8	..	1·4	2·2
Factories/offices (general surveys) (6)	Total number of examinations	..	590	111,350	128,020	256,280	270,940	248,930	95,830	60,500	15,590	140	1,188,170	..	250	146,760	106,970	101,000	111,220	93,620	28,330	9,670	4,450	80	602,350	1,790,520
	No. with tuberculosis requiring treatment or close supervision (0)	..	..	43	117	246	259	222	99	68	34	2	1,090	..	..	69	89	68	70	40	9	2	1	..	348	1,438
	Rate per 1,000 examinations	..	..	0·4	0·9	1·0	1·0	0·9	1·0	1·1	2·2	14·3	0·4	..	..	0·5	0·8	0·7	0·6	0·4	0·3	0·2	0·2	..	0·6	0·8
	No. with tuberculosis requiring occasional supervision only (1)	..	..	41	52	252	390	436	248	171	69	..	1,659	..	..	32	46	88	154	146	44	23	14	..	547	2,206
	Rate per 1,000 examinations	..	..	0·4	0·4	1·0	1·4	1·8	2·6	2·8	4·4	..	1·4	..	..	0·2	0·4	0·9	1·4	1·6	1·6	2·4	3·1	..	0·9	1·2
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	..	..	0·8	1·3	1·9	2·4	2·6	3·6	4·0	6·6	14·3	2·3	..	..	0·7	1·3	1·5	2·0	2·0	1·9	2·6	3·4	..	1·5	2·0
Persons in prisons Borstals, etc. (6X)	Total number of examinations	280	160	4,290	3,960	4,510	2,850	1,800	720	570	2,020	..	21,160	130	80	250	210	290	310	290	170	240	1,300	..	3,270	24,430
	No. with tuberculosis requiring treatment or close supervision (0)	1	..	2	4	7	18	15	7	11	8	..	73	..	..	..	..	1	..	..	..	2	2	..	5	78
	Rate per 1,000 examinations	3·6	..	0·5	1·0	1·6	6·3	8·3	9·7	19·3	4·0	..	3·4	..	..	..	..	3·4	..	..	..	8·3	1·5	..	1·5	3·2
	No. with tuberculosis requiring occasional supervision only (1)	..	..	9	5	18	18	20	14	5	19	..	108	..	..	1	..	1	1	1	4	3	10	..	21	129
	Rate per 1,000 examinations	..	..	2·1	1·3	4·0	6·3	11·1	19·4	8·8	9·4	..	5·1	..	..	4·0	..	3·4	3·2	3·4	23·5	12·5	7·7	..	6·4	5·3
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	3·6	..	2·6	2·3	5·5	12·6	19·4	29·2	28·1	13·4	..	8·6	..	..	4·0	..	6·9	3·2	3·4	23·5	20·8	9·2	..	8·0	8·5
General Public Volunteers (7)	Total number of examinations	2,620	2,160	39,170	39,900	92,150	94,210	86,550	35,430	25,790	36,970	80	455,030	3,130	2,160	51,900	46,940	107,250	118,810	95,180	38,290	29,240	34,140	30	527,070	982,100
	No. with tuberculosis requiring treatment or close supervision (0)	1	2	20	47	94	107	129	59	34	60	2	555	3	1	37	44	95	92	49	19	20	19	..	379	934
	Rate per 1,000 examinations	0·4	0·9	0·5	1·2	1·0	1·1	1·5	1·7	1·3	1·6	25·0	1·2	1·0	0·5	0·7	0·9	0·9	0·8	0·5	0·5	0·7	0·6	..	0·7	1·0
	No. with tuberculosis requiring occasional supervision only (1)	1	..	15	27	82	158	186	102	98	208	..	877	1	..	12	19	121	205	214	86	75	93	1	827	1,704
	Rate per 1,000 examinations	0·4	..	0·4	0·7	0·9	1·7	2·1	2·9	3·8	5·6	..	1·9	0·3	..	0·2	0·4	1·1	1·7	2·2	2·2	2·6	2·7	33·3	1·6	1·7
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	0·8	0·9	0·9	1·9	1·9	2·8	3·6	4·5	5·1	7·2	25·0	3·1	1·3	0·5	0·9	1·3	2·0	2·5	2·8	2·7	3·2	3·3	33·3	2·3	2·7
Ante-natal cases (8)	Total number of examinations	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,610	7,160	8,960	2,040	10	..	..	..	..	20,780	20,780
	No. with tuberculosis requiring treatment or close supervision (0)	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	12	17	6	..	..	..	..	..	37	37
	Rate per 1,000 examinations	..	..	..	..	..	..	..	..	..	..	..	..	..	α	0·4	1·7	1·9	2·9	..	..	..	..	..	1·8	1·8
	No. with tuberculosis requiring occasional supervision only (1)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	37	17	1	..	..	..	..	68	68
	Rate per 1,000 examinations	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1·8	4·1	8·3	100·0	..	..	..	..	3·3	3·3
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	..	..	..	..	..	..	..	..	..	..	..	..	..	α	0·4	3·5	6·0	11·3	100·0	..	..	..	..	5·1	5·1
Psychiatric hospitals (9)	Total number of examinations	220	50	1,510	1,840	3,920	5,610	6,370	2,890	2,340	4,210	40	29,000	100	10	860	1,330	2,870	3,930	5,480	2,660	2,940	7,290	10	27,480	56,480
	No. with tuberculosis requiring treatment or close supervision (0)	..	..	1	1	8	7	13	6	4	12	..	52	..	..	..	1	2	4	4	6	5	3	..	25	77
	Rate per 1,000 examinations	..	..	0·7	0·5	2·0	1·2	2·0	2·1	1·7	2·9	..	1·8	..	..	..	0·8	0·7	1·0	0·7	2·3	1·7	0·4	..	0·9	1·4
	No. with tuberculosis requiring occasional supervision only (1)	1	..	2	1	12	25	39	16	18	39	3	156	..	..	..	1	9	13	12	7	9	16	..	67	223
	Rate per 1,000 examinations	4·5	..	1·3	0·5	3·1	4·5	6·1	5·5	7·7	9·3	75·0	5·4	..	..	..	0·8	3·1	3·3	2·2	2·6	3·1	2·2	..	2·4	3·9
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	4·5	..	2·0	1·1	5·1	5·7	8·2	7·6	9·4	12·1	75·0	7·2	..	..	..	1·5	3·8	4·3	2·9	4·9	4·8	2·6	..	3·3	5·3 5
All groups	Total number of examinations	15,180	12,720	193,930	189,220	385,960	401,340	373,150	148,530	101,640	71,460	280	1,893,410	14,970	11,780	237,540	177,810	246,550	261,220	216,680	78,980	48,890	56,970	160	1,351,550	3,244,960
	No. with tuberculosis requiring treatment or close supervision (0)	21	10	115	264	574	585	589	285	217	219	5	2,884	34	12	169	211	294	265	157	59	48	47	..	1,296	4,180
	Rate per 1,000 examinations	1·4	0·8	0·6	1·4	1·5	1·5	1·6	1·9	2·1	3·1	17·9	1·5	2·3	1·0	0·7	1·2	1·2	1·0	0·7	0·7	1·0	0·8	..	1·0	1·3
	No. with tuberculosis requiring occasional supervision only (1)	38	22	90	115	459	766	925	498	397	472	4	3,786	41	14	83	108	330	519	495	200	162	211	1	2,164	5,950
	Rate per 1,000 examinations	2·5	1·7	0·5	0·6	1·2	1·9	2·5	3·4	3·9	6·6	14·3	2·0	2·7	1·2	0·3	0·6	1·3	2·0	2·3	2·5	3·3	3·7	6·2	1·6	1·8
	Combined rate per 1,000 examinations for diagnoses (0) and (1)	3·9	2·5	1·1	2·0	2·7	3·4	4·1	5·3	6·0	9·7	32·1	3·5	5·0	2·2	1·1	1·8	2·5	3·0	3·0	3·3	4·3	4·5	6·2	2·6	3·1

NOTE.—The symbol α, where used to express a rate, indicates that whilst cases of tuberculosis were observed, no examinees were included in the ten per cent sample